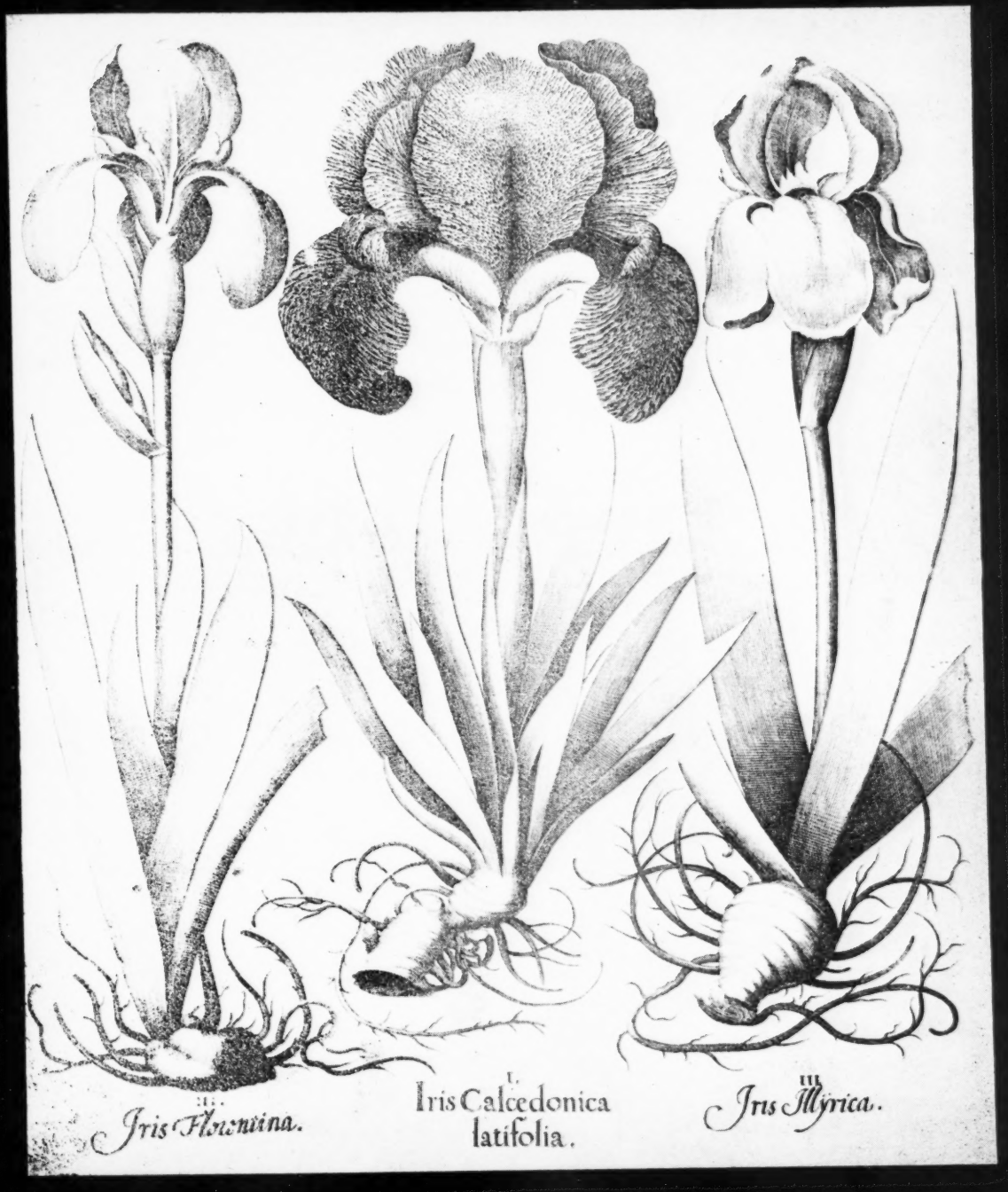
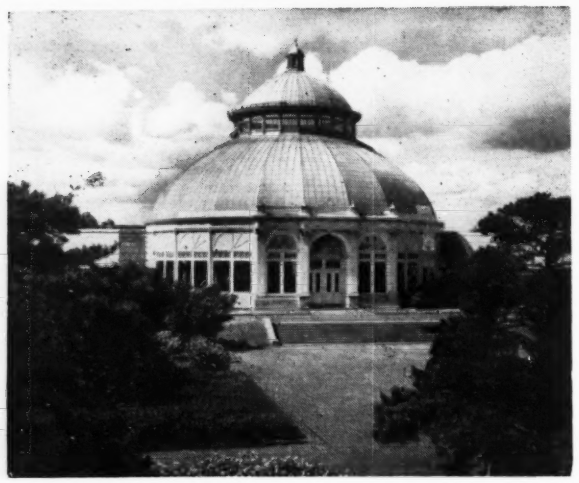


THE GARDEN JOURNAL

OF THE NEW YORK BOTANICAL GARDEN



Annual Meeting of The New York Botanical Garden, May 24.

Thirteenth Annual Rose Day at The New York Botanical Garden, in cooperation with the American Rose Society, June 9.

Pruning Exhibit in the Museum and Administration Building will continue through the summer, as also the exhibit "Lasting Beauty from Unexpected Sources."

THE GARDEN JOURNAL
of The New York Botanical Garden

DOROTHY EBEL HANSELL
Editor

CONTENTS

May - June, 1955

RANDOM NOTES ON A VISIT TO WEST PAKISTAN	*William J. Robbins*	69
OLD ROSES FOR MODERN GARDENS	*Roy E. Shepherd*	74
HERBS AT CORNELL HELP THE HOME GARDENER	*C. B. Raymond*	76
TWENTY-FIVE YEARS OF WORK WITH IRIS	*Barbara F. Walther*	77
ASTERS FOR LATE COLOR	*Dorothy Ebel Hansell*	81
A DISTINCT ENGLISH IVY	*T. H. Everett*	82
SPRING IN AN EXHIBITION HALL	*Mildred Saffell*	84
THE FOUR SEASONS AT THE NEW YORK BOTANICAL GARDEN		85
COMPANIONS IN GLASSHOUSE "TENBYTEN"	*Elsa Fort*	89
OUR FLOWERING TREES	*R. R. Fenska*	90
SCHOOL GARDENING	*Romaine F. Button*	94
MEET THE LATIN NAMES	*Emily Gibson Latham*	98
FLORA OF CUBA, VOL. III—A REVIEW	*Joseph Monachino*	99
BOOK REVIEWS		100
NEWS, NOTES AND COMMENTS		102
LET THERE BE HERBS	*Gertrude B. Foster*	104

AMONG OUR CONTRIBUTORS

We are delighted to bring to our readers the impressions which DR. WILLIAM J. ROBBINS gathered during his visit to West Pakistan as a delegate from the National Academy-National Research Council at the Seventh Pakistan Science Congress. . . . ROY E. SHEPHERD of Medina, Ohio, developed one of the finest collections of rose species and old-fashioned roses in the world, then donated this priceless collection to the Park of Roses in Columbus, Ohio. In recent years Mr. and Mrs. Shepherd have turned their attention to breeding rose varieties. Mr. Shepherd has been active in the American Rose Society and was awarded its gold medal in September 1954 for "distinguished service to old roses and their history." He is author of *The History of the Rose* and *Roses*. . . . C. B. RAYMOND until his recent retirement was Professor of Vegetable Crops at Cornell University. Mr. Raymond has had considerable experience in farming and home gardening, having run a farm for several years before he became County Agricultural Agent for twelve years and Extension Agent for eighteen years on vegetables and home gardening. . . . BARBARA F. (MRS. F. P.) WALTHER has been chairman of the Citizens Committee of the Presby Memorial Iris Gardens since their beginning in 1927 and the gardens owe their excellence to her unfailing devotion. She carries on winter and summer, day and night, and has done a remarkable job in bringing this very fine collection together. Mrs. Walther is an American Iris Society judge and has been and is active in garden club work and community affairs. . . . T. H. EVERETT is Horticulturist and Curator of Education of The New York Botanical Garden, author of *The American Gardener's Book of Bulbs*, and other books, and in demand as lecturer. . . . MRS. MILDRED SAFFELL is Assistant to the President of The New York Botanical Garden. . . . MRS. ELSA FORT is an ardent "begonian," and Eastern Chairman of Public Relations of the American Begonia Society. In the rooms of the Pennsylvania Horticultural Society, Philadelphia, on February 16 and 17, 1955, Mrs. Fort arranged a special exhibit of begonias selected from the more than two hundred kinds she grows in her hobby greenhouse at Merchantville, N. J. Mrs. Fort raises many of her begonias from seed. . . . R. R. FENSKA, forester and tree expert, received his Master of Forestry degree from Yale School of Forestry in 1913 and for twenty years taught forestry subjects at the University of Wisconsin, University of Montana, and New York State College of Forestry at Syracuse. For the past twenty-three years he has been associated with the F. A. Bartlett Tree Expert Company, and this is his nineteenth year as Secretary-Treasurer of the Westchester County Tree Protective Association. His book, *The New Tree Expert's Manual*, published in 1954, has enjoyed wide distribution. . . . ROMAINE F. BUTTON is Director of School Gardens, Board of Education, City of New York. . . . EMILY GIBSON LATHAM has long been a student of languages and botany and a graduate of the Lowthorpe School of Landscape Architecture in Massachusetts. Her enthusiasm for languages and botany has led her to delve into the stories behind plant names. . . . GERTRUDE B. FOSTER is editor of "Herb Grower Magazine."

CREDIT FOR ILLUSTRATIONS

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Random Notes on . . .

A Visit to West Pakistan

By William J. Robbins

My visit to West Pakistan was made in order to attend the Seventh Pakistan Science Congress at Bahawalpur as a delegate from the National Academy-National Research Council. I left New York at five o'clock on the afternoon of January 16, 1955, and arrived in Karachi about ten o'clock the night of January 18, having stopped an hour or two at Shannon, Paris, Zurich, Rome, Athens, Beirut, and Bagdad. The early part of the flight from Bagdad to Karachi was most spectacular, as I looked down on the valley of the Tigris and saw snow-capped mountains to the north, but forty-five hours in the air with brief stops at airports were more than enough.

January 19 was spent in Karachi. I met our Ambassador, Horace A. Hildreth, and also Dr. Rudolph Rivera, of the United States Information and Educational Service, paid a call at the U. S. Educational Foundation, visited the tomb of Jinnah, and saw something of the refugees. At five o'clock that afternoon, Dr. Rivera and I left by night train for Bahawalpur. The area from Karachi to Bahawalpur is a desert of scattered shrubs and wind-blown soil, with an occasional oasis. Water could change it into fertile land, as is demonstrated by the appearance of the country around Bahawalpur and still more of the region of Lahore, where more irrigation water is available.

Night travel in Pakistan trains is an experience. Bedding must be taken with you; I had a sleeping bag, but by morning everything in the compartment was covered with a thick layer of dust. Dr. Rivera and I carried a lunch with us, and in the morning picked up tea from a bearer at one of the many stops. Aside from the dust and the necessity of supplying one's own bedroll, a first-class compartment for two is not too bad; but one in which four travelers are accommodated becomes pretty well choked with impedimenta and people. Stations were crowded with travelers, almost all men, burdened with trunks, bedding and baggage of all sorts. An occasional traveler, probably from the northwest provinces, had a bandoleir of cartridges over his shoulder and a revolver slung at his hip.

Faculty and students welcomed us warmly about nine o'clock the next morning at the station in Bahawalpur, and saw us and other delegates on the train to our various quarters. We occupied a palace, formerly the residence of the Minister of Education. In fact, I received an invitation addressed:

Dr. Robbins, U.S.A.
Ex-Education Minister's House
Bahawalpur

Ambassador Hildreth and Mrs. Hildreth, John Callahan, *New York Times* correspondent, E. H. Fisk, U. S. Consul General at Lahore, and Mrs. Fisk, John Hutzel, attaché of the U. S. Embassy at Karachi, and Mrs. Hutzel, as well as other Americans, were quartered in the palace for part or all of the meetings which ran from January 21 to January 26.

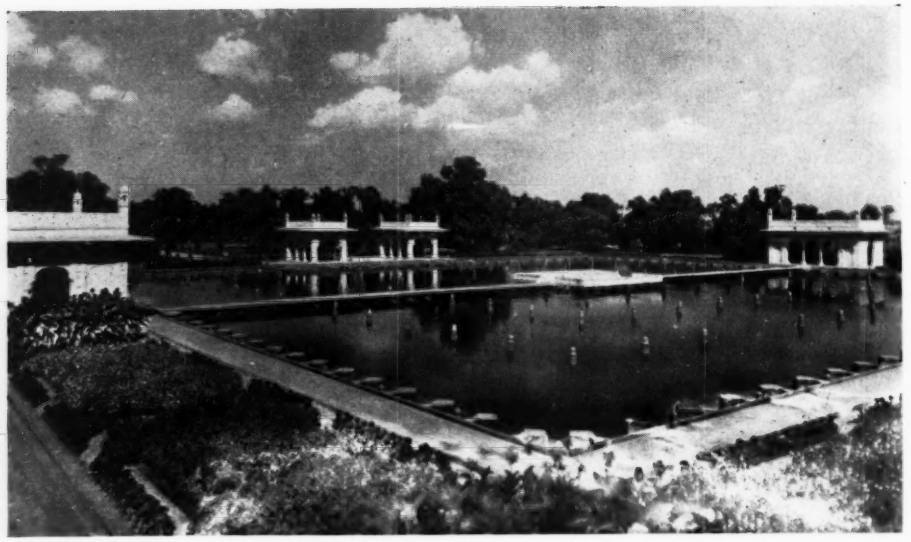
At the opening of the meetings the President-elect and the Secretary of the Pakistan Association for the Advancement of Science gave reports and addresses; the Ameer of Bahawalpur formally inaugurated the Congress; and delegates from Canada, Great Britain, Germany, India, Indonesia, China, Egypt, and the United States presented good wishes and greetings. Delegates from Japan, Turkey, and Russia also were at the Congress, but were not present at the opening ceremonies.

The papers and discussions were much the same in quality as those at comparable meetings in the United States; in fact, many of the participants had studied in this country or in England, and I felt myself to be in a familiar scientific atmosphere except for the setting. Camels stalking by in noble disdain, donkeys meekly trotting along with burdens greater than they were, women in purdah, half-naked sweepers cleaning the streets with a handful of twigs, barbers plying their trade on customers who squat before them on the pavement edge are not the usual sights accompanying a scientific meeting in this country.

In addition to attending meetings and delivering a popular lecture on The New York Botanical Garden and its program, I went to a reception at the Dring Stadium which, besides a swimming pool, football field, tennis courts, and other facilities, is said to have the finest cricket field on the sub-continent.

At a buffet dinner given by Mr. and Begum A. R. Khan, in honor of Ambassador and Mrs. Hildreth, I had the pleasure of eating palau, a national dish of rice and mutton which on occasion has pieces of silver foil scattered over it. The silver foil is thought to be very healthful; it is entirely without taste and any beneficial effect on my health must be entirely coincidental. The mainstay of the poorer classes is a wheat cake (chapatti) made from ground whole wheat and ghee and baked in a simple oven or over an open fire. Knowing how much more healthful such a bread is than our own, made from purified wheat flour, I could not help but hope that whatever other changes might occur in Pakistan this habit would remain.

I visited the local zoo, the palace (Nur Mahal, now used chiefly as a state guest house), and the jail. The zoo, originally the personal property of the Ameers, is now state owned.



The marble pavilion and tanks of marble fountains in the Shalimar Garden, Lahore, West Punjab—1637 A.D.

The director was most courteous; he brought out an elephant to perform for us and personally conducted us through the grounds, but I was most interested in the rose garden which, though poorly cared for, had lovely roses in fine bloom — some of the flowers a good five inches in diameter.

Exhibits at the Congress were staged under tents in a four-acre field adjacent to the college buildings and included products of cottage industries, agricultural products, and plants used by the desert people. The exhibit of "Atoms for Peace" from the United States was opened by Ambassador Hildreth; some fifty thousand people viewed it.

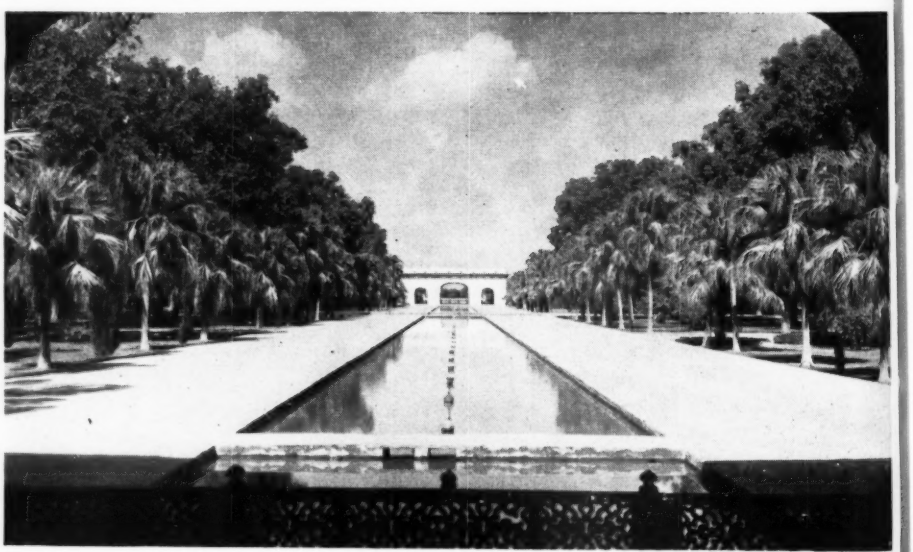
I wish it had been possible for me to bring back to The New York Botanical Garden the tent in which the opening ceremonies for the exhibit of "Atoms for Peace" were held. I had never seen anything to equal the gay colors made by pieces of cloth sewn in patterns (appliquéd) on the inside of the tent, which was made by hand some twenty years ago in Bahawalpur. Tents of this character are erected on the least excuse for meetings, banquets, and similar events.

Among the products of West Pakistan on display were castor beans, peanuts, flaxseed, saffron, wheat, oats, tobacco, millet, cotton, sugar cane, bananas, oranges, tangerines, grapefruit, arum tubers, turnips, peas, potatoes, sweet potatoes, maize, cauliflower, and lettuce. Mangoes, papayas, dates, and mustard, the latter grown chiefly for its oil which is preferred for cooking to cotton seed oil or maize oil, are also products of West Pakistan.

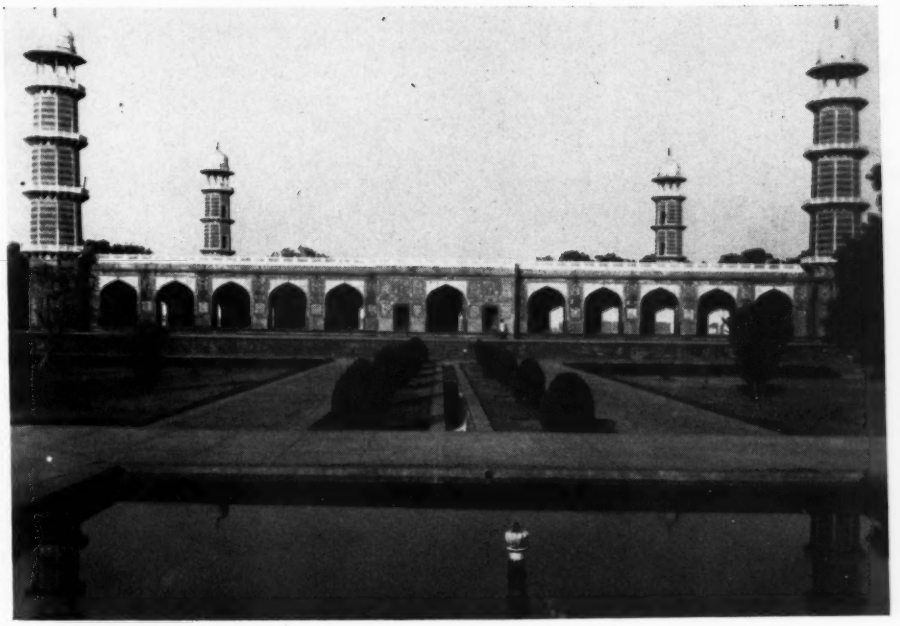
The exhibit of plants used by the desert dwellers included flowers of Phog *(Calligonum polygonoides)* and of Karir *(Capparis aphylla)*, fruit of Karir, seeds of Helra, pods of Jand *(Prosopis spicigera)* and mushrooms (probably *Phellorinia* sp.), all of which are collected and dried for food. In addition, Katran grass *(Andropogon squarrosus)* eaten by cattle and said to give a desirable flavor to milk, Khip *(Leptadenia spartium)* used for fuel and to make rope, Booi used for filling pads for the backs of camels, Lana *(Salsola foetida)*, a camel food, and Kahr *(Haloxylon recurvum)*, which yields an ash high in sodium carbonate and sodium chloride, were on display.

In one district of the bazaar section of Bahawalpur are concentrated two hundred or more shops, each eight to ten feet wide. Everything from old bottles to false teeth are available. Trailed by several dozen curious onlookers, I watched candy made, beginning with sugar cane from which the juice was squeezed; a physician (hakeem) surrounded by herbs and bottles, prescribing for a patient; and observed the preparation of betel nut. On a leaf of *Piper betle* a brownish mixture of slaked lime and katha from *Acacia Catechu* is spread, then one or more of several powdered ingredients (tobacco, cardamon, cinnamon, nutmeg, and other spices) are dusted over the lime according to the taste of the customer and, lastly, the bits of betel nut, *Areca Cathecu*, are dropped on. Betel nut is served at banquets in much the same spirit that we provide cigarettes or cigars, and red spittle staining the ground and walks is evident everywhere. It is said that more people chew betel nut than chew gum—something hard for an American to believe.

On January 25 I took a night train to Lahore where I was the guest of Mr. and Mrs. Fisk. Lahore is the university center of West Pakistan and historically of great interest as the home of a succession of moguls in the sixteenth and seventeenth centuries. In addition to giving three lectures to groups of students (a few girls together in the front row) and faculty, I was entertained by Dr. and Mrs. Snyder, working under FOA, by Mr. and Mrs. Shelnutt of the U. S. Information and



The palm avenue from the pavilion in the Shalimar Garden, Lahore, West Punjab.



A general view of the mausoleum of Emperor Jehangir in Shahdarar, near Lahore, West Punjab—1630 A.D.

Educational Service, by Dr. M. Afzal Hussain, Vice-Chancellor of Punjab University and President of the Pakistan Academy of Sciences; had tea with a group of scientists, and attended an evening reception given by Indian Ambassador Rau in celebration of India's Independence Day. Hundreds of open lamps burning mustard oil, set on the edge of the roof and other vantage points of the Ambassador's home, outlined it and made a festive sight.

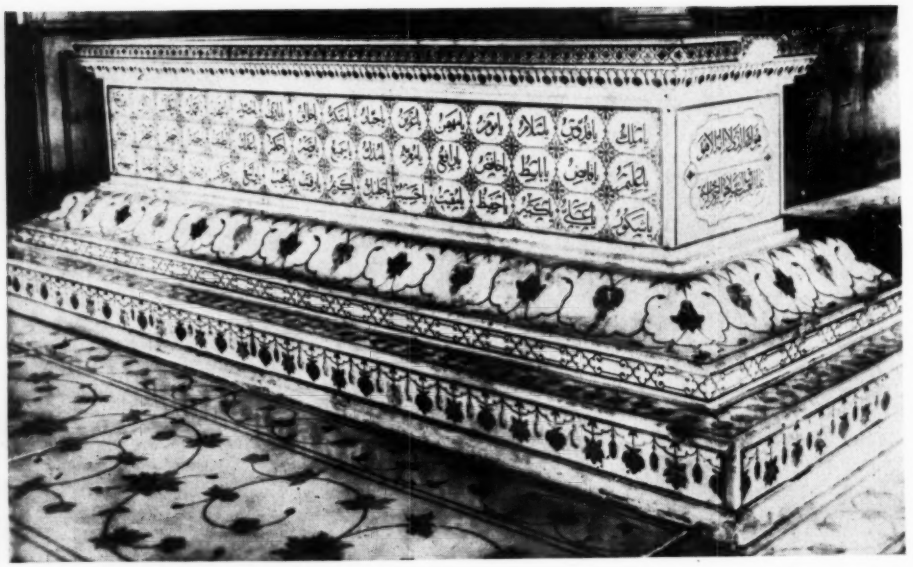
A four-day cricket match between all Pakistan and all India was being held during my visit, and I spent two hours one morning viewing the match and the fifty thousand or more people who had come to see it. The spirit shown by the crowd toward the players from India was admirable. Good plays by the members of the India team, which was especially strong in fielding, were applauded by the spectators and although two or three thousand rooters from India came to the match, there were no serious disturbances. The brick bleachers, seating forty thousand spectators, were put up for the matches and removed when the contest was completed!

One of the sights of Lahore is the Fort. Emperor Jehangir, and especially his son, Jehan (who built the Taj Mahal), added much to this structure in the early years of the seventeenth century. I entered through the Elephant Gate, which is gorgeously decorated with mosaic tiles featuring lifelike elephant fights, camels, horses, and other figures. From the Elephant Gate a ramp leads up into the interior of the fort on which the emperors were carried on elephant back when they returned from their campaigns, thus avoiding the necessity of dismounting and walking to their quarters. The Fort was not only a military structure, but had luxurious living quarters and facilities to permit the emperor to meet with his court and public. Two gardens with pools are included within its limits. In the Shish Mahal, or Palace of Mirrors, the walls and ceilings of which are decorated with bits of mirrors and glazed tile, the Kohinoor diamond was presented to Sir John Lawrence. The glazed tiles and inlays of semi-precious stones have been, in part, vandalized, but what is left is wonderful in design and execution. I noted realistic inlays of iris, lilies, tulips, and other flowers. One tile, supposed to date from 1605-1631, depicted a man smoking a hookah, which suggests that tobacco had reached the sub-continent by that time. Window screens carved from single slabs of marble two inches thick and yet delicate in their tracery add much to the beauty of the Fort.

I visited also the Shalimar (Place of Joy) Garden about five miles from the railroad station. About halfway to the Shalimar Garden is a rose garden, which was laid out in 1655. On its gateway is written in Persian, "Sweet is this garden. Through envy of it the tulip is spotted. The rose of the sun and the moon forms its beautiful lamp." The tulips portrayed at the Fort have streaked petals, caused by a virus disease. I wondered whether the phrase "the tulip is spotted" referred to this condition. The rose of the sun may be the red rose and the rose of the moon, the white rose.

I did not stop to see the rose garden but went on to the Shalimar Garden, which was laid out in 1637 by order of Shah Jehan. It covers forty acres and is surrounded by a wall with pavilions at the corners. Built in 1641, it was completed in seventeen months and four days. Mangoes, cherries, apricots, peaches, plums, apples, almonds, quinces, seedless mulberries, sour and sweet oranges, cypresses, poplars and other trees were planted. In 1711 one hundred and twenty-eight gardeners were employed; none was in evidence when I was there.

I entered the garden through a large gate to the upper terrace, which is traversed by a canal bordered by brick walls. The old bricks are distinguished from the new by their thinness; modern bricks are two or three times the thickness of the old. The bricks are laid in patterns, which add to the interest of the walks. The canal is crossed at right angles by a second canal; and in them are one hundred fountains. Water for these canals was brought from one hundred miles away, an astonishing engineering feat. At the end of the terrace is a marble pavilion and near the pavilion at one side of the canal is a small house with a well, evidently a place where the emperor, if he wished, could spend a night in solitude. The canal empties over a marble falls some ten or twelve feet high into a rectangular pool in which there is a marble island. A platform below the falls permitted the emperor and his immediate favorites to sit and enjoy dancers performing on the island. From the pool another canal edged with brick walks runs off into the distance. Some two hundred fountains are located in the pool and canal of the lower terrace. Though now poorly cared for, the garden is impressive because of the water and the vistas. It is said to be less beautiful than a garden of the same name in Kashimir, but the proportions and essential landscaping make the garden in Lahore unforgettable.



A part of the interior of the mausoleum of Emperor Jehangir, showing fresco painted wall.

The Tomb of Jehangir (1627) located at one end of the garden of his wife, Empress Nurjahan, makes an impression somewhat similar to that of the Shalimar Garden because of the vistas. As I entered the garden, I saw an old mango tree with a trunk at least six feet in diameter. The building which houses the tomb is one story high with four tall minarets, one at each corner, and the roof, which can be reached by a stairway, is surrounded by marble screens. The cenotaph must be approached in stocking feet and is notable because of the flowers, realistic in color and form, which are represented in inlay with semi-precious stones (pietra dura). I noted cyclamen and anemone which I had not seen at the Fort. Vandals had removed an inlay of rubies and diamonds at each corner of the tomb. Above the flowers in black script are the ninety-nine names of God.

I visited a typical village in the neighborhood of Lahore. It is surrounded by a mud wall. Two hundred or more people live in "houses" built of mud or sun-dried brick; each house has a small open compound with rooms behind it, a central well supplies water, and the animals are confined within the village wall. Here and there patty-cakes of cow manure, eight or ten inches in diameter, were plastered on the walls and drying in the sun; these are used for fuel. In the material used for house construction, in the community living and general plan of the buildings, an Indian village reminds one of a pueblo in our own West. Such a crowded community has no room for trees or grass; there is no electricity, no radio, no daily paper, and the lack of privacy and facilities for recreation must be extreme. We were met by a horde of happy children, who welcomed us most enthusiastically and accompanied us during our tour of the village.

In contrast, the military cantonment built at the edge of Lahore by the British occupies a large area with broad, tree-lined streets and well-constructed buildings.

January 28 was kite fighting day in Lahore, a contest taken quite seriously by the local residents, some of whom take the day off in order to participate. The sky was full of kites, some with their strings entangled, and now and then one fluttered to the ground, defeated by another more ably handled.

On January 31 I flew from Lahore to Rawalpindi, some one hundred and eighty miles, and spent a day and night with Dr. and Mrs. Ralph Stewart. Dr. Stewart is principal of Gordon College and a botanist who took his doctor's degree at The New York Botanical Garden and has worked here on many occasions since. Dr. Stewart has accumulated the best herbarium in Pakistan, some fifty thousand specimens, and is called on freely for authoritative information. Mrs. Stewart was kind enough to show me her lovely water colors of plants and scenes in Pakistan and Kashimir. Dr. Stewart's photographs of collecting trips in the Himalayas made me long to stay and accompany him on the next one to that wild but beautiful country.

Gordon College, which is privately supported, has thirteen hundred students; it is badly overcrowded and needs books, buildings, equipment, and funds. The importance of its contribution to education now and in the more than sixty years since its establishment cannot be over-estimated. I had the pleasure of inspecting the library, museum, and laboratories and giving a lecture to the students.

I returned to Karachi by air and spent the next five days giving lectures and visiting individuals, laboratories, and museums.

Pakistan offered a surprising variety of plants. Palms, bananas, oranges, mangoes, papaya, dates, the flame tree, banyan, and many other tropical or semi-tropical trees are grown where adequate water is available. What seemed to be a strange mixture of annuals and perennials were in bloom, mostly in pots, including nasturtiums, coxcombs, cosmos, pansies, bachelor's buttons, sweet peas, bougainvillea, roses, asters, chrysanthemums, dahlias, carnations, petunias, delphiniums, morning-glory, poinsettias, geraniums, and cannas. In a popular book on *Trees of India* by Charles McCann, I noted that ten of the seventy-eight trees described came originally from tropical America, which emphasizes that plants have no national boundaries and each country is indebted to others for some of their most cherished plants.

English is generally spoken, though Urdu is the major language of the common people. European dress is general in government, professional, and college circles, but the costumes characteristic of each section of the country, with white predominating, especially the various and striking turbans and Persian lambskin caps, are more prominent on the streets. Few women appear in public places; purdah is general though disappearing. The people are European in feature and inclined to be slender and wiry rather than stocky; the older men with white mustaches contrasting with their bronzed skin are most distinguished looking. The food is well flavored to my taste, though I avoided dishes heavily charged with hot peppers. The courteous and friendly reception afforded me during my brief stay in Pakistan will long remain a

pleasant and treasured memory.

With family ties broken and limited prospects for immediate improvement in their lot, some of the young men would like to emigrate to Canada or to the United States. One morning, before I was out of bed, the bearer who brought my tea told me a young man wished to see me and presented the following letter which speaks for itself:

"Sir: I want to go with you in your country as a servant or brother, as you like, sir. I am ready. It is my request. I beg to say I passed my matriculation examination in 1954 in——— University in second division. In this time I am reading at ——— College in the first year. I am a good student, a good speaker, good singer, good captain of the hockey team and the cock of the class. I come of the noble family of———in healing, nobility and character. I am a young man of 18 years. My father was commander-in-Chief, unit———in———. He died in the partition of India and Pakistan. Sir, if you want me I shall be very thankful to you. Sir, I will do your duty and my duty and progress by leaps and bounds. Sir, if you want me as a servant I will serve my life in your house and country. I will merit your selection. Sir, it is my agreement and promise, by God. May you succeed. I might live for long. I am an orphan. May God bless you with a son. Yours obediently."

I talked with the young man and a friend who wished also "to go with me to my country." Both were fine-looking, upstanding youngsters but, of course, I could do nothing for them except to suggest that opportunities lay ahead in the new Pakistan.

Before ending these random observations, a few general remarks on the country may be of interest. Pakistan is a nation created in 1947 out of the Muslim majority areas of British India and contiguous princely states. It is a republic and a member of the British Commonwealth and is divided into two parts, separated by one thousand miles of Indian territory. East Pakistan is situated at the head of the Bay of Bengal, is subtropical, well watered, and with a population of about forty-five million is one of the most densely populated areas of the world.

West Pakistan is bounded by India on the east, Iran and Afghanistan on the west, and the Arabian Sea to the south. It is an arid, flat country which requires irrigation. Its climate is, in general, much like Arizona or southern California; temperatures in the summer are high and in the winter frost does not occur except in the northern part. West Pakistan has a population of about thirty million.

During partition, some six million Hindus left Pakistan for India and an equal number of Muslims came from India into Pakistan. There are still thirty-five million Muslims in India, and refugees continue to drift into Pakistan. During the early migration, perhaps one million people were killed or died of starvation and disease. This situation is, fortunately, past and efforts to maintain good relations between India and Pakistan are meeting with considerable success. However, since most of the shopkeepers, clerks, civil servants, and professional people were Hindus, Pakistan after partition was left in a most difficult condition. Banks, for example, lost all their clerks and bookkeepers and closed until personnel could be trained; a government without even desks, paper or pencils had to be organized and a horde of refugees required food and living quarters. Karachi, a city of three hundred to three hundred and fifty thousand, grew to one million five hundred thousand in seven years, largely due to the influx of refugees, many of whom are still living in makeshift mud huts or anywhere they can find shelter. The courage, initiative, and industry which enabled Pakistan to accomplish what it has commands our admiration.

The difficulties still ahead, however, require more courage and more self-sacrificing patriotism. Illiteracy exceeds ninety percent. Except for people and land, natural resources, for example, oil, coal, wood, and minerals, are non-existent or very limited. Industrial development is far behind. The deficit in building is great, in spite of extensive new construction. Pakistan is an old country—Alexander the Great marched through it and left part of his army as colonizers. It is also a new country, fired by a desire for independence and an ambition to reach the economic and social status of a modern state. Veiled women pass foreign women in sweaters and shorts; camel-drawn carts meet automobiles, busses, and trucks; water buffaloes and Brahman cattle draw wooden plows in fields over which airplanes fly; mud huts lean against the walls of college buildings; the new and the old meet in Pakistan as they do over all the Middle East and Far East. Let us hope that the good of the old habits and customs is not lost in the ferment accompanying the impact of modern aspiration, ideas, and equipment.

Flowers, realistic in color and form, are represented in inlay with semi-precious stones, on the cenotaph in the mausoleum of Emperor Jehangir.

OLD ROSES
for
MODERN GARDENS

By Roy E. Shepherd

Rosa Moyesii Hensla and E. H. Wile.

THE AVERAGE ROSE LOVER may find it extremely difficult to believe that our modern many-petaled roses are descendants of the simple wild roses that beautify the wastelands of the northern hemisphere. Yet this is true. During the period of evolution, several distinct types attained popularity and each was temporarily considered the ultimate in rose perfection. As the newer types became available, those which preceded them were discarded and many have since been lost. This is regrettable, as several possessed desirable attributes that are lacking in the roses that succeeded them in favor.

A definite trend toward a revival of interest in the old and species roses is now apparent and, fortunately, several have again been made available to the public. These comparatively rugged individuals give much and demand little. Admittedly, the majority bloom but once a year. But why do so many gardeners demand that a rose bloom repeatedly to justify its planting? We are seemingly satisfied with a lesser production by shrubs of another genus, and surely none produces blossoms comparable in beauty and pleasing fragrance to those of even the most primitive rose.

Another attribute that is frequently overlooked is the abundant production of brilliantly colored seed hips, or fruits, of many varieties. They add greatly to the beauty of the garden during late summer, fall, and winter; are attractive in flower arrangements; and supply food for many kinds of birds. Incidentally, the availability of food and the security offered their nests by the thorny flexible canes encourage birds to make your garden their permanent home. For practical reasons alone the shrub type roses pay their way, as pest control is rarely a problem where the bird population is large.

During the many centuries that the rose has been the preferred flower of mankind, types for practically every garden purpose have been created. Modern hybridists and their predecessors who developed improved and different types by selection have increased the beauty and color range of the individual blossoms and greatly extended the blooming season. This has been accomplished, in most instances, at the expense of hardiness, disease resistance, vigor, and all-round durability. Plant deterioration has been almost as rapid as blossom improvement throughout the genus.

It is unfair and difficult to compare the value of the old and the modern roses, however, as both have a distinct and non-conflicting place in the garden of today. The position of the modern hybrid teas, floribundas, and grandifloras has been highly publicized and requires no further discussion, but that of the old roses and species is not fully appreciated. The latter are not designed to replace the newer (and frequently over-rated) introductions, but they may be used advantageously in conjunction with them. In fact, we should consider the older types as shrubs rather than as bedding plants. In addition to their worth in this field and their attractiveness, they possess a certain historical, sentimental, and geneological value.

Only under extreme conditions does the soil or environment impose a handicap on them, and they are generally hardy and disease resistant. There are varieties and types ideally adapted to form a wide shrub border, to intersperse with other shrubs in the border, to use as specimens; or they may be planted in beds devoted to roses of the same or similar types. They also have utilitarian as well as esthetic value. The thorny character of some types causes them to be more effective, and surely more attractive, than a barb wire fence in preventing trespassing. Others have such deep growing and spreading root systems that they will stop soil erosion where other methods have failed.

Rosa gallica var. *versicolor* Thory.

The purpose for which they are used should dictate the care they require. As a whole, this should be very little as they are well able to take care of themselves. Planting is no different than that required by the modern types, although a somewhat greater depth will encourage "own rooting." This will extend the life of the plant almost indefinitely and induce natural spreading, if this is desirable. The species roses seemingly prefer a poor soil, and excessive fertilization is frequently a deterent to normal blossom production. This is understandable, as their natural habitat is usually in soil that is too poor to produce a profitable food crop. Nature has apparently decided that a soil that is too unfertile to be profitable should at least be beautified.

The damasks, gallicas, centifolias, mosses, and others of hybrid origin desire food in proportion to their vigor. If you have solved the problem of the food requirements of the modern roses in your garden, you should have no

difficulty in supplying the proper amounts to the old roses.

Dusting or spraying to control diseases and pests is rarely necessary, but occasional application does no harm.

Many growers of roses of these types are reluctant to attempt pruning, as they are fearful that they may seriously injure the plants. Actually there is nothing complicated, mysterious, or technical about this task; and cutting back, even to the crown, will not permanently injure the plant. It is not advised, however. Pruning accomplishes several purposes: it improves the health, appearance, and productiveness of the plant by replacing old wood with new; better adapts it to the place where it is grown; stimulates new growth; and improves the quality of the flowers. The preliminary steps, applicable to all types of roses, consist of the removal of all dead wood, the cutting out of all weak, useless, or diseased growth, and the shaping of the plant. In most instances this will suffice, as roses of these types require less drastic cutting back than the moderns. Always bear in mind that a maximum framework should be retained, because the leaves are important food gathering instruments of the plant. Approximately six healthy leaves are required to produce sufficient food to manufacture one average blossom. Quantity rather than quality of bloom should be the objective in pruning the species and the old roses.

Rosa centifolia var. 'Christata Prevorst'.

Their greatest value lies in mass production rather than in the production of individual exhibition grade flowers.

There is little purpose in arousing enthusiasm for a variety that cannot be obtained from commercial growers. Unfortunately, there are many of these and they will continue to be unobtainable until the demand becomes larger through a greater appreciation of their value. The following list of recommended varieties must, therefore, consist only of those which are presently obtainable from one or more sources. Others of equal, or possibly greater, value must be ignored—this is a regrettable though necessary procedure.

CRESTED MOSS—botanically this interesting rose is not a true moss, but it is generally placed in that group. The deep pink buds are surrounded with a lacy fringe, or crest, are exceedingly attractive and fragrant. This rose is hardy, and grows to four or five feet.

CARDINAL DE RICHELIEU—often referred to as the "blue rose," but the blossoms are a dark rich violet or purple. They are double and quite fragrant. This is a hardy, compact plant to four feet.

HARISON'S YELLOW—a very old semi-double yellow variety, of unquestionable hardiness, that grows to about eight feet and dislikes pruning. It therefore becomes rather leggy in time and should be planted where other roses conceal the base. This rose, of American origin and carried westward by the pioneers, is still found in both old and modern gardens.

Rosa Mundi—bears large semi-double variegated blossoms of white, pink, and red. It rarely exceeds three feet in height, is hardy, and has large round fruits. Much superior to the supposedly historical York and Lancaster rose, under which name it is frequently sold. *Rosa Mundi* suckers freely and will soon become a rather large clump.

Rosa alba—there are several forms and hybrids of this hardy six-foot species. The single to double blossoms range from pure white to pale blush. A fine specimen plant, or the various forms may be used as accent points in the border. Its fruits are attractive.

Rosa altaica—the Cherokee rose of the North is exceptionally hardy as its native habitat is Siberia. It is suitable for specimen or border planting. The large, almost white, single flowers and black fruits are borne on an attractive well-shaped plant.

Rosa anemoneflora—a vigorous *Chinese* species that is reasonably hardy and produces its double white blossoms in clusters of from three to nine. They resemble those of the double anemone. It does not produce fruits. *R. anemoneflora* is ideal for a pillar as the canes are quite flexible.

Rosa carolina—a good subject for naturalizing as it spreads rapidly and is attractive in growth, foliage, blossoms (single bright pink) and fruits. It is extremely hardy and grows three to six feet in height.

Rosa chinensis viridiflora—perhaps the ugly duckling of the rose family, but the "green rose" never fails to attract attention; the double flowers are deep green and the plant is always in bloom. It has a compact habit of growth to about three feet; may require protection in the North.

Rosa centifolia and its many hybrids—favorites in old-time gardens and desirable additions to those of today. They average about six feet in height, are hardy but rarely bear fruits. The blossoms are so full that roses of this family are often referred to as "cabbage" or "hundred leafed" roses. Consult current catalogs for preferred varieties—obtainable in many colors.

Rosa Hugonis — probably the best known of all rose species. The bright

(Continued on page 80)

Rosa rubrifolia Villars.

HERBS AT CORNELL

HELP THE HOME GARDENER

By C. B. Raymond

THE DEPARTMENT OF VEGETABLE Crops at Cornell University for many years grew a small collection of the more common and easily propagated perennial herbs. These were under the guiding care of Professor Paul Work, who retired in 1950 and is now completing a two-year teaching assignment at the Agricultural College of the Philippine Islands. This planting served to expose all students in the beginning course in vegetable crops, taught by Dr. Work, to the appearance and fragrance of such plants as chives, sage, wormwood, peppermint, spearmint, curly mint, and a few others. It was destroyed nearly ten years ago in a program of grading and draining to improve the department area for experimental purposes. At that time the value of the herb planting was limited to the brushing - by acquaintance gained by those in Dr. Work's classes and the home culinary use made of it by a few of his intimate friends who had come to know of this planting. No direct attempt was made to have this herb planting of interest and value to the public, garden clubs, or even other departments of the college. In fact, only a small portion of the Vegetable Crops Department staff knew much about Dr. Work's herb planting.

When the writer took on the extension teaching job in the broad field of home gardening, he soon realized that in addition to vegetables and small fruits, home gardeners wanted help with the growing of herbs. Furthermore, it wasn't just sage, parsley, peppermint, and sweet basil but almost every herb that anyone could think of —yea, dozens of them never before heard of—plants native to anywhere from the poles to the equator. Actually, of course, this should be expected since in every community there are people from all corners of the globe, each with his special taste for the flavors of plants indigent to his native land. Embarrassment at lack of knowledge on questions about growing these plants soon wore off after learning that many of them were native to the tropics and could not be grown outdoors in this state.

There still remained, however, a rather long list of plants other than vegetables and fruits, essentially all herbs, which could be grown and on which home gardeners sought advice. Many wanted to know what certain herbs looked like, how they tasted or smelled. A still greater number requested identification of specimens—a job which, of course, could be, and is, readily handled in the office of a systematic botanist. But this still leaves much to the imagination of the gardener and a great deal more to a garden extension teacher, who is left with the responsibility of helping with the cultural problems of a hundred or more widely different and some quite unusual plants.

Just as the best place to learn to swim is in the water so, too, the best place to learn about herbs is in the herb garden where they are growing. To help all concerned, a new herb garden was started by the writer in the Vegetable Crops Department research plots at Cornell in the spring of 1952. Thirty-five kinds of the more common and useful herbs comprised the first-year planting; fifteen more have since filled up the allotted space.

A small exhibit of potted herbs at the Annual Farm and Home Week of the Agricultural College in 1953 attracted so much attention that all concerned were further encouraged to continue — in fact, to work toward a larger, better, and permanent location. The original planting was adjacent to research plots, so it was necessarily locked within a high fence and inaccessible to visitors except during working hours or by special appointment.

Cornell University has an extensive enterprise known as Cornell Plantations with thirty-six hundred acres of property that include the university campus. This enterprise also includes an arboretum, botanical garden, laboratory, and recreational facilities, agricultural and horticultural pursuits, and is promoting the study and enjoyment of all things that grow. The plantations committee has now set aside an area that beginning this year will provide for an enlarged herb garden. It is a beautiful location along the Fall Creek drive and close to the rose and flower gardens and other ornamental plantings. In this new location, where it will be easily accessible and open to the public at all times, the herb garden should be of value to both the trained and the novice grower of herbs. It will stimulate interest and inspire thousands more to try some of these useful plants.

Here there will be an opportunity to compare the oft confused savorys, winter and summer; the sweet and wild marjorams; the sages and the thymes. The numerous mints are a thrill to many, especially the pineapple, anise, and orange mints with their so different fragrances and flavors. Costmary, rosemary, lemon balm, lavender, hyssop, and dozens of others will lend their fragrance and beauty to the garden most of the growing season; but if nothing else gives unusual color, borage is quite sure to attract attention with its large hairy leaves and blue flowers.

The herbs which have the most popular appeal are those used for the seasoning of foods—vegetables, meats, fish, poultry, yes, and beverages. What is more refreshing than mint leaves with hot or iced tea? But numerous herbs are also grown mainly for pleasing odor, as one walks among, or steps on, them in the garden or plucks them for use in the home, either fresh or dried, so that they may be available all the year. A few are grown for their medicinal value.

Relatively little skill is required in growing most of the common and popular herbs. Anyone experienced in the growing of garden vegetables or flowers should easily be successful with most herbs. A few are difficult to start, and some need protection to survive our New York winters or are better if potted and taken indoors in the colder

(Continued on page 79)

Twenty-five Years of Work with –

IRIS

By **Barbara F. Walther**

MAYBE THE TITLE SHOULD READ, "Twenty-Five Years of Fun with Iris." For that is what these years have been, and don't think of twenty-five years as a long time; they whirled by before we knew it.

That these reminiscences may have a definite location, the iris talked about are in the Presby Memorial Iris Gardens in Montclair, New Jersey. These gardens are a memorial to Frank Presby, one of Montclair's outstanding citizens and a well-known horticulturist. Mr. Presby crossed iris and peonies and was one of the founders and the first treasurer of the American Iris Society.

The Presby Iris Gardens in Montclair are a unique community project. The Town of Montclair provides all of the labor, materials, new soil, fertilizers. The Garden Club of Montclair each year furnishes a fund for the purchase of new iris, and there is a large committee of horticulturally minded citizens, known as the Citizens Committee of the Presby Memorial Iris Gardens. This Committee plans and supervises the work, takes care of the markers—a tremendous job, provides hosts and hostesses for every afternoon and evening during the weeks of the blooming season, and carries on many diverse tasks. It should be stated here that, in the opinion of the writer, she was appointed Chairman of the Committee because she lived next door. While botany and lecturing on trees were her avocation, still she is convinced the reason for her appointment was her nearness.

So these reminiscences are from one who set to work on iris knowing practically nothing about them, who stumbled through many blunders, but feels today that E. B. Williamson expressed her own feelings when he said he would like to live a thousand years to see what would be done with iris then.

Twenty-five years is a very short time in which to consider any plant in its long period of development, and the iris is especially rich in historical background. It has been a garden flower for centuries, and there are records of it as far back as 1500. The Codex of Dioscorides, of which the writer likes to think as the doctors' *materia medica* of that time, contains information on the iris. This largely concerns the flower as regards its medical and cosmetic properties. We know that the iris, because of its beautiful form, was used in designs by the early Greek sculptors. In the Presby Iris Gardens is a lovely modern smooth tan iris recently developed by Dr. Kleinsorge, well known for his work in this field. He named this lovely tan iris 'Thotmes the Third' after an old Pharaoh who lived in Egypt 1500 years ago. This Pharaoh on his military excursions into Asia Minor saw iris growing there. He liked it so well he had his soldiers take it to his garden in Egypt. He had his sculptors carve it on his tomb which, it is said, can be seen to this day. When one looks at this beautiful tan flower in the Presby Gardens today, he feels that the old Pharaoh, because of his liking for iris, comes alive again in that modern 'Thotmes the Third.'

There are many personalities connected with the Iris Gardens of Montclair, flower personalities and human personalities. There are the men who work year after year weeding and caring for the iris so that they become a real part of the Gardens and we regard them as friends. Among a large group of men and women, such as comprise the Citizens Committee, who love flowers and work to improve and benefit the iris project, one cannot help but form friendships that are deep and lasting. Their service to the community, as well as to gardeners everywhere, is incalculable.

Part and parcel of the Iris Gardens are the personalities of the men and women who through their crossings and hybridizing have created the wonderful modern iris. When the iris bloom, their personalities are represented in the varieties they have produced. We know that visitors enjoy the flowers more, when they are told who produced this new wonderful kind and where it was produced. The Committee believes that the visitors should be cognizant of what they owe to the men and women who have, through their hard work, developed the fine iris the gardeners can now use in their own gardens.

Of course, there are amusing incidents which occur each season. One of our favorites is about a very nice lady who lives only a few miles away in the next town. She came fairly dashing in one afternoon toward the end of the season and said to the hostesses, "Well, I'm so glad that the iris are still in bloom." Then she told them she had never known these gardens were in Montclair; but that she had been in London and, at a dinner, an Englishman seated next to her said, "Let's see, your town is near Montclair, isn't it, and how are the Presby Memorial Iris Gardens this year?" Needless to add that she became one of our favorite annual visitors.

There is never a dull moment when the iris begin to bloom. Terrible storms occur when the wind, rushing down from the hilltop, hurls down the iris. Then the Committee's S.O.S. goes out and there is a gathering of friends who tie up the iris as quickly as possible, so that the next day they may have again that fine attribute which is theirs—the beautiful erect carriage of the stem. There are the enthusiastic visitors from all over the country who come because they are interested in iris. Sometimes the place has a particularly gala effect as friends meet again in the Gardens, and it looks as if the iris were holding a big reception. There are poignant moments when someone has lost a loved one and writes that the beautiful Iris Gardens helped him in his sorrow.

The historical sections of the Presby Memorial Iris Gardens have created more interest among visitors than anyone expected they would, when they were first planted. In the historical beds are iris starting with the early 'Florentina' of 1500 down to the iris of the nineteen thirties. The iris are carefully marked with name and date, easily read as one walks along the path.

There are plaques in these sections which tell interesting historical facts. One explains the historical bed and quotes from the Codex of Dioscorides. Another plaque gives Gerard's description of iris, as he wrote it in the old herbal. Still another quotes Claudius Clusius, who, back in the fifteen hundreds, collected iris and grew them and raised iris from the seed that appeared. He noted "that iris grown from seed differ in a wonderful way." Ah, there was the clue to the modern hand-crossing of iris; but it took several hundred years before the gardeners caught on and began the hand-crossing, which has brought into being the fine iris we have today.

Then there is a plaque which pays tribute to Sir Michael Foster of Cambridge, England, who, in the late eighteen eighties and early nineteen hundreds, did so much to encourage the crossing of iris. America's first hybridizers are remembered also. Of course, many modern gardeners feel that the only iris meriting attention are the gorgeous new ones coming from the present-day hybridizers. A pause for thought and one realizes that, after all, what the modern hybridizer has accomplished today is based on the iris brought into being by those early gardeners who were interested in improving the iris flowers. The Citizens Committee in charge of the Presby Gardens not only felt that these outstanding results of the early crossers should be saved, but that these historical beds of iris, a link between the living present and the past, would be of general interest to all flower lovers. They have proved to be of much wider interest than was ever anticipated.

The curving paths, along which are planted the bearded iris, follow the curving rocky depression of an old brook site. Along both sides of this brook site are planted siberica and orientalis iris and, intermingled for later bloom, fine examples of the Kaempferi, or Japanese iris. Now we have a few lovely Louisiana iris, with more promised. The siberica iris are eagerly studied by those who have pool edges or brooks to plant, or who want graceful curving leaves to soften some harsh spot in a garden. They are such lovely things that visitors who have not known them before, fairly rave over them. We can spot an enthusiastic wild flower gardener by the way he or she spots the siberica iris and streaks for them.

Twenty-five years of remembering means a thought for the species bed, which was started very early. The first iris in it were cristatas and reticulatas from our own wild garden, the cristatas collected when in the Indiana sand dunes and the reticulatas a present for our own gardens from Mr. Presby. Today we have samples of oncocylus and regalis iris, of the bulbous xiphiums and xiphioides, and many others. The deep feeling a person has for the flowers of his childhood has been brought home to us many times by inquiries from someone far from his homeland, who asks to be told where the iris from Korea, or West China, or some other distant place, can be seen. It matters not that the iris is not in bloom; he or she will stand and gaze at the plant, memories easily adding the flower.

All through the twenty-five years, along with all the human personalities who have touched our life, are those of the iris themselves. We so often hear a visitor exclaim, "Look at this iris, it is so well named." Of 'Ballerina,' a new golden-tan, they say it is exactly like a lovely ballet dancer, with its fluttery out-held skirts and its dancing air. Then they ask, "How do they name iris? We think such and such an iris is just like its name." Someone standing in front of 'Rainbow Room' remarks that that is just what the iris is—a rainbow. As for 'Breaking Waves,' nothing was ever more aptly named—in that iris one can see the froth and ripple as the waves break on the shore. 'Sable Night' has such a blue-blackness, everyone exclaims about it. 'Chantilly,' with its soft pink color and chantilly lace edge, and 'Blue Shimmer' are great favorites, as is also 'Minnie Colquitt,' which is called by many visitors the 'Orchid Iris.'

In the grand white iris of today are 'Snow Flurry,' 'Citadel,' 'Ice Carnival,' 'Cliffs of Dover,' 'Helen McKenzie,' 'Tranquility,' 'Two Snows' and 'New Snow,' 'Lady Boscawan,' 'Alba Superba,' and 'White Sprite,' to name only a few. It seems too bad to select a few of any color and not to speak of many others. Each iris has its own personality which makes it desirable. We all praise 'Distance' and 'Cameo' and could not do without them. 'Pink Sensation' and 'Happy Birthday,' 'Norah,' 'Medicine Man,' 'Top Hat,' 'Black Hills,' 'Party Dress,' 'Mary Randall,' 'Yours Truly,' 'Rosedale,' 'Cascade Splendor,' 'Argus Pheasant,' 'Bluebird Blue,' 'Cinnamon Toast,' 'Lotte Lembreck,' 'Desert Song,' 'Golden Hawk,' 'Grasmere,' 'Mattie Gates,' 'Jane Phillips,' 'Chivalry'—these are just a few of the numerous outstanding modern iris.

Gardeners in recent years have become more and more interested in crossing iris. The New Jersey Iris Society, which was initiated by members of the Citizens Committee of the Presby Memorial Iris Gardens, has a number of members who are very interested in crossing iris. So that phase of iris work has become one of the services the Presby Gardens give—showing anyone who wants to know, how to cross.

Planting an iris garden is like an artist mixing colors on a palette. After twenty-five years of studying colors in iris, we realize that the beauty of each variety is enhanced or harmed by the one next to it. A certain shade of pink with a certain blue shade is an exquisite combination, while another shade of pink is delightful next to a certain shade of red. The color of the beard on an iris may dominate the flower and reduce its overall beauty; on the other hand, the beard may enhance the iris and add to its attractiveness.

One time early in the game of iris growing, it was decided to gather all the iris of one color together because, it was thought, that might give the gardener a chance to compare the shades and see which he wanted. After two years of bringing into bloom about nineteen shades of pink, one planted next to the other, we were appalled. Not only as a picture was it poor, but no one could possibly decide which pink he wanted, so deadly was the effect of one pink on the other. Just as a lovely girl coming into a ballroom in a delicate pink dress looks exquisite, until another girl arrives in a deeper shade of pink—then the delicate pink dress looks faded and washed out.

The iridescent quality in the coloring of the iris flower, its fragile delicacy and perfect form, so clear cut, the wonderful proportion of falls and standards, each year entrance one anew. Each part of the day has a different light effect on the iris. Many like best

the iris just before the twilight hour, while the morning light seems to increase the clearness and add to the texture of the flower. The elusive quality of the fragrance of the iris is often commented upon. Old lovely 'Mt. Cloud' will always be a favorite, because of her charming form and satisfying fragrance.

CARE OF THE IRIS

Visitors to the Presby Iris Gardens constantly ask, "How do you grow iris so well?" The answer is that the method used to grow them creates an environment the bearded iris like in this particular locality. In another locality, entirely different methods might be needed. For example, it is sometimes said that manures never should be used with bearded iris. Yet we have seen good iris grown in soil that is heavily manured each year — it was a sandy porous soil through which commercial fertilizer just drained away.

In the Presby Iris Gardens in Montclair, New Jersey, the soil is largely clay. Since the gardens are at the foot of a long slope, where water easily accumulates, and snow and ice stay in the wintertime, it was learned that the beds had to be raised eighteen inches for good drainage. Since doing this, through many years, we have had very little rot trouble. So drainage to us is the first requirement of the bearded iris. The second requirement to us seems to be lots of sunshine and air, and the gardens, thanks to the timely advice of John Wister, were laid out with this need in mind in the beginning.

Some three hundred and fifty feet of the bearded iris beds are replanted each year. When replanting, fresh soil is used; this, it is felt, is more important than fertilizer. The fertilizers mixed in the fresh beds are bone-meal, 5-10-10, a few phosphate crystals, and a very little limerock. No further fertilizing is done until the next replanting time.

The iris bloom is individual in its likes and dislikes. Some iris, such as 'Purissima,' need to be moved fairly frequently and respond well when this is done. Some, when planted close together, get sulky and won't bloom well. Other iris, even if badly crowded, just climb up on the old rhizomes and send up good blooms, as if to say, "We were afraid we might miss something."

The siberica and Japanese iris plantings are treated differently. Leafmold is added to the soil and a little 5-10-10. When applications of manures have been made, splendid results followed. As a rule, our spring season is quite rainy, which satisfies this type of iris; otherwise, they seem to respond well to just ordinary garden care.

The iris borer is quite a problem in the area where these gardens are located. Having learned that the borer worm hatches from eggs laid in the fall by a moth, it has been the custom for years to cut off the iris leaves to within five or six inches of the soil in the late fall. The iris is cleaned up thoroughly, removing all weeds, debris, and old leaves.

The beds are then left open to the sun and air until the first week of December, when a slight, very slight, covering of salt hay is put on the beds with brush to hold it down. In this way, we experience practically no borer trouble. We call this the preventive method of control.

HERBS (from page 76)

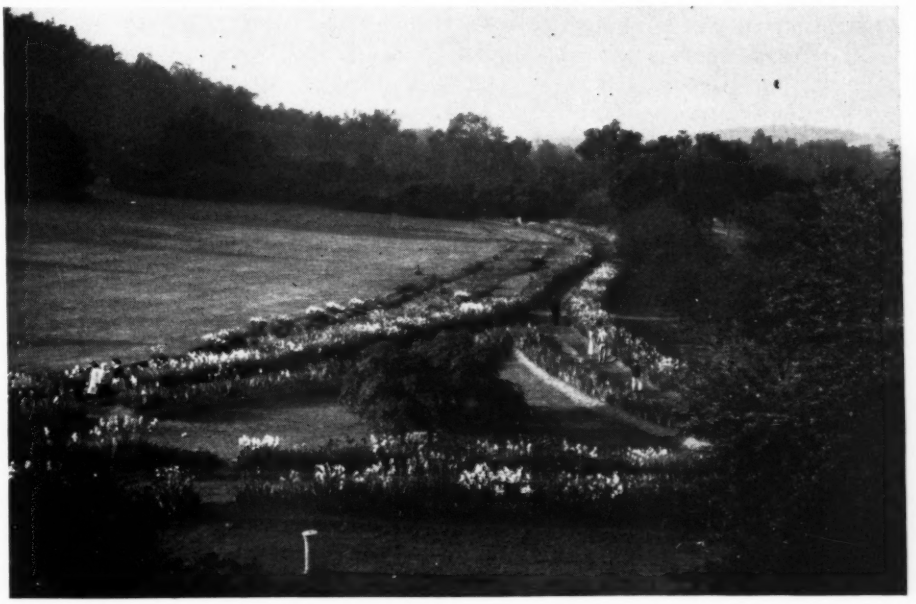
regions of the state or in cold windy exposed places.

Several of the very useful herbs, perennials as well as biennials and annuals, can be started from seed. Upwards of a dozen kinds are offered by companies packeting vegetable and flower seeds. There are, however, many more that must be started by division of a plant or by cuttings of root runnners or stems. The rooting of stem cuttings is not always easy, and inexperienced gardeners might do well to leave such a task to those having the know-how.

There are so many sources of help in herb growing today that no one need limit his interest to reading about someone else's garden, to pictures in catalogs, or to just wishing. Even the city dweller can enjoy herbs, if he has a window for a four-inch flower pot. One or two well-cared for plants will supply him with at least some fragrance and flavor.

The common herbs are not exacting in soil requirements. Their principal need is good drainage—a loose soil. Some of the mints, however, thrive best in moist soil. Direct exposure to a full day's sun is necessary for the rapid growth of most, but not quite all, of the herbs. Fortunately, most herbs are not subject to insect or disease attacks.

Those who do not have opportunity to visit the herb garden at Cornell, or the herb garden at The New York Botanical Garden, or any other herb garden, can get helpful suggestions on herbs from the College of Agriculture at Ithaca, New York. Extension Bulletin No. 841, Culinary Herbs by W. C. Muenscher, recently retired, is available and Leaflet No. V53, Herbs for the Home Garden, is also free from the Department of Vegetable Crops. This leaflet is mainly a ready reference for the beginner. Garden clubs or other



A general view of the Presby Memorial Iris Gardens in Montclair, New Jersey.

groups may be interested in the collection of thirty-eight colored slides in the film loan library. Each slide has a detailed script, including suggestions on the growing and the use of the particular herb. If you should be in the Finger Lakes region of New York State any time from early spring to late fall, don't forget to visit the herb garden along Fall Creek at Ithaca. It's a beautiful drive — but don't get so absorbed in all the other beauties that you forget the herbs.

COOKING WITH HERBS

By Lonnelle Raymond

Some people grow herbs just for the enjoyment of the unusual aromas in the garden, but everyone even with only a little garden space may well grow them for the new and unusual flavoring of many foods. When the season of harvest is at hand that is the time to be prepared. Prepared for what, do you ask? To put that zip in your everyday casseroles and vegetables. On the days when all seems lost, that is to say, when everyone from juniors to seniors have gotten out on the wrong side of the bed, then you may use your magic wand of herbery and bring back a smile to each member of the household.

Shall we start at the base with basil? It is an annual and one of the easiest to grow. Plain old tomato juice combined with one quarter of a teaspoonful of dried basil for each large glass of juice becomes a gourmet drink—it causes raised eyebrows, Oh's and Ah's. In omelets the faintest pinch of dried basil gives the dish a lift and pleases the taste buds. Never, but never, cook fresh shrimps without adding one half of a teaspoonful of fresh or one quarter of a teaspoonful of dried basil to the water in which the shrimps are boiled. Is your family tired of green beans? Then season the beans with basil—and watch how fast they disappear.

One herb which is best when freshly picked is chives. You need no new recipes to use this—just add a little, finely chopped, to cottage cheese, or salad dressing, or when cooking fresh peas. For a new taste treat, add one teaspoon of thyme, or parsley, or rosemary, or savory to your recipe for white sauce.

Herb butter is a "sure fire;" combine one quarter of a pound of softened butter with one teaspoonful each of basil, marjoram, parsley, and tarragon. Mix thoroughly and use in sandwiches or to spread on broiled meats or fish, or to season vegetables. It can be kept in a jar in the refrigerator—always ready. Apple mint is a favorite in our family for steak or lamb chops.

Rosemary offers a happy surprise, when a pinch is added to muffin mix before baking, of course, or to scrambled eggs. But go slow—be sure to use only a pinch. For a different flavor to home-made vegetable soups take one quarter of a teaspoonful each of savory, marjoram, thyme, and basil; tie them up in a little piece of cheesecloth, and drop this in the hot soup one half hour before serving.

Do take time to experiment with herbs when you have grown them. An herb recipe is a "conversation piece" at tea parties. Speaking of tea, try an infusion of fresh applemint, rosemary, thyme, and basil. This is a delightful and different beverage.

Do remember to go easy on herbs—a little goes a great way. Chives and parsley are the only two with which you dare to be generous.

OLD ROSES (from page 75)

yellow single blossoms are borne festoon-like along the arching six to eight-foot canes in early May. The fruits are small, round but, unfortunately, not persistent. *R. Hugonis* (the "golden rose" of China) demands a poor soil and is hardy.

R. Moyesii—a beautiful and desirable but exasperating species. The large, single, ruby-red blossoms are unequalled in color by those of any other rose, but the plant has a tendency to sulk if planted in fertile soil. Hardy and vigorous to ten to fourteen feet, it is somewhat awkward in growth; it should be planted as a specimen or in the background of the border. The large, pitcher-shaped, orange-red fruits and attractive foliage are distinctive features.

R. omeiensis — a novelty in that it produces four-petaled, white flowers, whereas those of other single roses have five petals. The foliage is attractive, and the tall canes are covered with exceptionally large, translucent thorns and well clothed with lacy, fern-like foliage. *R. omeiensis* is hardy and grows to about ten feet, if conditions are to its liking. The bright crimson, pear-shaped fruits are borne on yellow stalks. *R. omeiensis pteracantha* is similar, but its thorns are even larger.

Rosa pendulina—rates extremely high in the opinion of those who value the fruits as well as the blossoms of a rose. The deep pink to bright red, single flowers are quite attractive, but probably less so than the large, elongated, scarlet fruits that hang so gracefully along the canes and persist into the winter. This native of the Alps is very hardy, has nice growth, and makes a fine specimen plant. The ultimate height is controlled by environment and may range from three feet up.

Rosa Roxburghii — obtainable in both single and double-flowering forms. The former is hardy and extremely vigorous, but does not repeat; the latter is lower growing and repeats, but requires protection in the North. Both have sycamore-like bark, attractive foliage, and large prickly fruits. Unfortunately, the fruits fall rather early and the double form occasionally does not produce them. The blossom color is pale pink to white. This species rose is a pleasing combination of beauty and novelty.

Rosa rubrifolia—the red-tinged leaves are unlike those of any other rose, so use this rose where contrast in foliage color is desired. The single, star-shaped, pink blossoms are small and relatively unimportant. The plant is hardy, vigorous to about six feet, and produces a large crop of globe-shaped scarlet fruits.

R. Watsoniana—the blossoms are small and resemble those of the wild blackberry, but the plant compensates for this by being heavily clothed with the most interesting leaves in rosedom. They are long, narrow, and mottled with white spots; and in shape they resemble those of the willow tree. It is a hardy, compact bush to about six feet and thrives best in partial shade. Try it as a specimen or in the border. *R. Watsoniana* rarely sets fruits, but flower arrangers find many uses for the foliage.

Rugosa Roses — comprise a large group of both old and modern types. Several very desirable forms are listed in current catalogs. They vary greatly in stature, degree of hardiness, and adaptability; varieties to suit the location and purpose should be selected. The more recent hybrids are generally less hardy than the older ones, but the

blossom form is better. They all possess one inherent characteristic—they will thrive where other roses fail.

SALET — probably the only available dependably recurrent moss rose. It is hardy, and the rose-pink buds are heavily mossed. Moss roses of other varieties are still obtainable from certain growers, and they are the elite of the old roses.

STANWELL PERPETUAL—a low-growing, hardy shrub rose that produces its double, fragrant, blush-pink blossoms intermittently throughout the summer. There are many locations where this rose may be used advantageously.

VARIEGATA DE BOLOGNA — A variegated rose that appeals to those who like "something different." The blossoms are double, white striped with magenta, and are borne in clusters of from three to five. It is hardy and grows to about six feet.

The foregoing varieties and species are, in the writer's opinion, the best of those available. The New York Botanical Garden will gladly tell you the names of the growers who list them.

ASTERS for LATE COLOR

By **Dorothy Ebel Hansell**

THE LATE-FLOWERING ASTERS, or Michaelmas daisies, have made a place for themselves in our gardens though, for one reason or another, their praises are not sung as loudly as are some of the other late flowers.

Ranging in height all the way from six inches to six feet and flowering from late August well into October, they are very useful in extending the season in the perennial border and in brightening up the foreground of shrub plantings. A number of the named varieties, too, can be cut for decorative arrangements in the home. The dwarf kinds are excellent for the rock garden, and there are others which fit naturally into the wild garden.

The wild asters grow in widely varying conditions from shade to full sunlight, from rich moist soil to the driest and poorest soil. Most of the named varieties, however, have been developed from species which are found in moist areas, so they should be planted in a loam that retains moisture for a reasonable period. If a prolonged dry spell occurs, they—rather the soil in which they are growing — should be thoroughly watered to a depth of at least six inches. These asters also like full sun; otherwise, especially in damp weather or if planted too close together, they may suffer from mildew. This can be controlled by spraying or dusting with a Bordeaux mixture or any reliable fungicide. In damp weather, it might be a wise precaution to use the fungicide as a preventive against mildew attacks.

Aster novae angliae from which many garden hybrids have been developed.

The plants should be lifted and divided at least every two years, discarding the center portions and replanting the outside pieces. In fact, the best practice is to lift and divide every spring—especially the strong growing varieties. This operation, by the way, can be performed after flowering as well as in the spring.

Another necessary task is staking the plants with the exception, of course, of the dwarf kinds. Brushwood or stakes should be set in the ground early in the summer before the side shoots are fully developed. Pinching out the central growing tip of each stem induces branching. Thinning out some of the weaker stems not only produces a better plant and better flowers, but helps to keep the lower leaves in a healthier condition and tends to encourage flowers on the lower part of the plant.

Named varieties have been developed by English and American hybridizers. The truth of the matter is the English hybridizers were awake to the garden possiblilities of our native asters before we were. In catalogs these asters are sometimes listed in groups under the name of the species from which they were derived: New England or Aster *novae-angliae;* New York or Aster *novi belgii;* rock or *Aster alpinus;* and *Aster dumosus.* In addition to these species and their horticultural forms, other species from eastern and western United States are desirable subjects for the garden.

The New England aster is one of the most widely known of the American asters and the parent of many fine horticultural forms — 'Barr's Pink,' 'Harrington's Pink,' 'Jane McMullen,' 'Survivor,' and 'Wonder of Staafa.' The species itself, anywhere from four to six feet tall, is a superior background plant for the hardy border. From late August through October its showy purple flowers are a familiar sight along roadsides and in fields from Quebec to South Carolina and west to Colorado. Its refined offspring boast of the more delicate colors of their flowers—rosy mauve, soft pink, shell-pink, and wisteria or violet.

The New York Aster is another prolific parent of popular garden asters—'Amethyst,' 'Beechwood Challenger,' 'Climax,' 'Mount Everest,' 'Palmyra,' and 'Violetta.' The characteristics of the parent are continued in the named varieties as far as the bushy habit of the plant, free blooming, its long branching flowering stems, and the smooth lance-shaped leaves are concerned; but the flowers of the named varieties are larger and come in several pleasing colors—to wit, violet-purple, clear red, lavender-blue, white, pure pink, and violet-blue.

A new race of dwarf hardy asters, developed from *Aster dumosus* was introduced some ten years ago. In September and October, these foot-high plants are a dense mass of blooms—shell-pink, lilac-pink, lavender, red, or white, depending upon the particular variety. 'Constance,' 'Lilac Time,' 'Victor,' 'Little Red Boy,' and 'Niobe' may be recommended for the front of the perennial border or for choice spots in the rock garden.

Another well-thought of aster for the rock garden is *A. alpinus.* This hails not only from our own western mountains but is also native to the mountains of Europe and Asia. Plants of

(Continued on page 83)

A DISTINCT ENGLISH IVY

By **T. H. Everett**

FOR WELL OVER TWENTY YEARS I have been interested in a plant of a form of *Hedera Helix* (English ivy) that grows in the grounds of the Church of the Good Shepherd at Matilda Avenue and 238th Street in the Bronx, New York City. This plant differs from any other English ivy with which I am acquainted and expert plantsmen, including H. E. Downer, Horticulturist (retired) of Vassar College and J. H. Beale, Superintendent (retired) of the Boyce Thompson Institute, to whom I have shown the specimen are of the opinion that it is distinct and different from all other English ivies they have seen.

With a species as unstable in form as *Hedera Helix,* a variant to be of serious interest to gardeners must be not merely different from other forms, but must be different in such a way that the plant has some special gardening value. I believe the plant to which I refer possesses such characteristics.

The 238th Street specimen grows on a free-standing chain-link fence about four feet high and some few feet away from the wall of the church. It faces almost due south and is exposed to full sun throughout the winter and for almost all day during the summer. The earth in which the plant grows is of indifferent quality, not particularly moist and so far as I have observed the plant receives no care other than an occasional light shearing when it tends to grow out of bounds.

Despite these generally unfavorable conditions I have never known this ivy to show the slightest signs of burning or discoloring in the winter; it remains bright green at all times. Even in the winter of 1934 it showed no signs of damage although a privet hedge growing immediately adjacent to the ivy, like most other privet hedges near New York, was killed to the ground.

Plants propagated from this specimen and planted at The New York Botanical Garden and in the grounds of the 52nd Police Precinct Building on Webster Avenue in the Bronx exhibit this same resistance to winter damage. The plants at the Police Precinct Building have attached themselves to a brick wall and attained a height of twenty feet or more. They face almost due south and are exposed to full sun for practically the entire day.

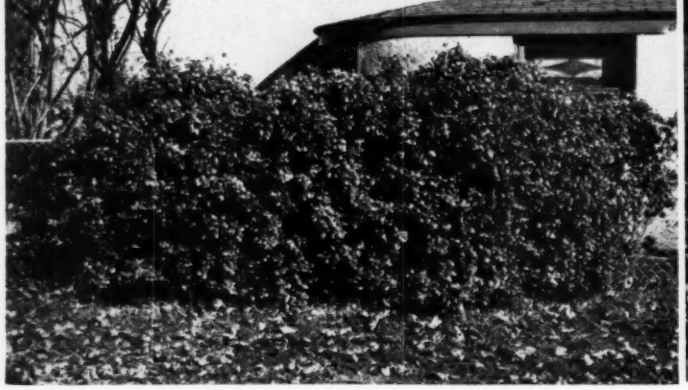
Another important feature of this plant is the freedom with which it flowers and produces fruits. The 238th Street plant is literally covered with umbels of light green flowers in late fall and these provide a rare attraction for bees. The plants on the Police Precinct Building bloom and fruit freely from ground level to their uppermost parts.

Propagations of this ivy planted at The New York Botanical Garden bloom when a few years old where they are raised about a foot above the ground on a railing support. I have not observed them flowering from shoots actually trailing along the ground, but I have not had the opportunity of watching such shoots for long. I would not expect shoots in contact with the soil to flower and fruit.

The leaves of this ivy are unlobed, those of the fruiting branches are the heart-shaped kind that one associates with mature, stem-rooting, flowering branches of *Hedera Helix,* but unlobed leaves are by no means confined to short, flower-bearing shoots as are those of the so-called tree-ivies *(Hedera Helix arborescens).*

This ivy produces, in addition to flowering shoots, which have unlobed leaves and are without stem roots, long, stiff non-flowering viney shoots that have smaller unlobed leaves, and that produce rootlets along their length and cling to masonry walls when they have the opportunity to do so.

The leaves vary very considerably in size but those of the viney shoots are markedly smaller than those of the flower-bearing shoots. The leaf blades of the latter are normally two to three inches in diameter, those of the viney ones are usually one to two inches across. The lengths of the peti-



A variant of *Hedera Helix* growing on the grounds of the Church of Good Shepherd in the Bronx, New York City.

Note the vigorous, stiff shoots of this form of English Ivy, and how they spread horizontally.

oles vary greatly in both types.

Near the base of one of the specimens at the Police Precinct some ivy growing on the ground has some lobed leaves, but I am not at all sure that this is a development from the ivy in which we are interested. No such lobed leaves have appeared on this ivy in other locations; those at the Police Precinct Building may be on shoots of another kind of ivy previously growing there and now interspersed with our plant.

Another growth character of this ivy that is very noticeable is that the viney shoots with heart-shaped leaves are vigorous, stiff and spread very horizontally. They follow contours very closely and exactly. Some planted by our Head Gardener and allowed to grow for a couple of years in a concrete cold frame spread flat over the soil bed in the frame, ascended the interior walls and then spread themselves horizontally for a considerable distance into space beyond the edge of the walls.

The fruits of this ivy are large (each about one-quarter inch in diameter) and decorative. They are carried in globular umbels of about forty and each umbel measures about one and a half inches in diameter. The fruits at first green, deepen gradually in color through the winter and by late March are mostly deep olive green with a black cap. Even at that late date they are plump and unwithered. Later they become entirely black.

The specimen in the church grounds at 238th Street has a main trunk four to six inches in diameter and obviously is of considerable age. The church was built in 1915 and as some of the employees of The New York Botanical Garden were members of the congregation it seems not unlikely that the plant came originally from the Garden. This is pure speculation, but I have observed in gardens in the vicinity of Kew in England and the Arnold Arboretum at Jamaica Plains, Massachusetts, rare and unusual specimens that obviously originated from the living plant collections of the local institutions; it seems not improbable that gardens in the Bronx have benefitted in similar ways. Be that as it may, the ivy is a good one and ample stock is now in cultivation at The New York Botanical Garden.

The hardiest form of English ivy recorded before this is the variety *baltica* but this seems to differ from the plant here discussed in the marked lobing of its leaves and in its general appearance. The type plant of *Hedera Helix baltica* grows on a wall of the Administration Building of the Arnold Arboretum; it has borne fruit but only at a height of about third-story windows.

The fruits, carried in globular umbels, are large and decorative.

In view of the very grave confusion that exists in the recognition of varieties (clons) of *Hedera Helix* it is a bold (or foolish) person indeed who lightly describes and names new varieties, yet here is a plant that obviously possesses superior qualities, that offers considerable possibilities as a winter-hardy, evergreen, blooming and fruiting plant for growing on fences, posts and other supports and that has every promise of making a first-class ground cover. It may be that this represents a fruiting form of *H. Helix baltica* but as *H. H. baltica* itself is so extraordinarily difficult to distinguish from typical *H. Helix* (Gentes Herbarium 6:141) this is perhaps impossible to determine. In any case it seems important for this ivy, which appears so different from typical *Hedera Helix,* from its variety *baltica* and from other recognized forms to be given a name if it is to be propagated and distributed as would seem desirable. I therefore suggest that it be known as *Hedera Helix* 238th Street.

ASTERS (from page 81)

the species itself can be purchased from several sources, and one plant specialist can also supply the improved form 'Goliath.' Yes, its flowers are bigger and of a clearer violet-blue. Perhaps we should have excluded the rock aster from this article, for it can hardly be considered late flowering — it flowers in June and July.

From the common name, blue wood aster, one may surmise—and rightly so—that the flower color of *A. cordifolius* is blue and that this plant prefers partial shade. It is a branching, four to five-foot high plant, with large heart-shaped basal leaves and narrow stem leaves; a delightful subject for a shady corner in an informal shrub border, at the edge of a bit of woods, or in the wild garden. It blooms freely all September and into October and demands little or no attention. 'Silver Spray' is a fine named form.

The big blue aster, *A. spectabilis,* gets its name from the size of the violet-blue flowers, which are one and a half to two inches across and are produced generously in August and September. The plant itself is low growing, to about twelve inches, and spreads out after it has become established. It is nice in the rock garden; will tolerate a little shade, though it does better in sun; and insists on sandy, acid soil.

The heath aster, *A. ericoides,* can also be grown in the rock garden, if measures are taken to prevent its roots from encroaching on neighboring plants and if its height is reduced by clipping. Two excellent hybrids, 'Blue Star' and 'Chastity,' have been raised in England from this native American. The latter has the same starry white flowers of the parent, and they fairly smother the plant in September. As the name indicates, the flowers of 'Blue Star' are blue—light blue.

From the prairies of North and South Dakota — and also from Wisconsin and Texas—comes *A. Kumleinii.* The broad, ten to twelve-inch high plant becomes a solid mound of blooms —blue ray flowers with bright gold centers—in September. Several named varieties have been developed by a South Dakota gardener; one is listed as 'Dream of Beauty.'

Hardy, of easy culture, unrivalled for their gay colors, asters are fine late flowers. Why not grow more?

SPRING in an EXHIBITION HALL

Eighty-fourth Annual Spring Flower Show of the Massachusetts Horticultural Society

***By* Mildred Saffell**

RIDING NORTH TO BOSTON on the train I saw nature already at work thrusting tender — yet tenacious — new green shoots of grass through the railroad cuts. I saw homemakers at work in their yards with rake and paint-brush — the inevitable sign of spring. I sensed the first murmurings of spring at work in the fields, the woods, and the brooks. By the time I arrived at the Spring Flower Show of the Massachusetts Horticultural Society, where every inch of the exhibition hall overflowed with color and fragrance, I could feel once again the renewal of life and the renewal of faith that always comes to me at this time of year.

From the moment I arrived, the staff of the Society made me feel very much at home, for so many of those whom I met asked to be remembered to Dr. Robbins, Miss Hall, Mrs. Hansell, and Mr. Everett. The Executive Secretary of the Society, Arno Nehrling, was most gracious, and he introduced me to George Taloumis, Associate Editor of "Horticulture," the Society's official magazine. Mr. Taloumis took me on a very instructive two-hour tour of the show.

One pleasant feature of the show was the complete separation of floral exhibits and commercial displays. For those of us who have looked unfavorably on "too commercial" flower shows, it was a relief to study at leisure one magnificent display after another without commercial booths distracting attention. After all, while we recognize the necessity of chemical, mechanical and other gardening aids, we don't expect to find these things actually in our finished gardens — unless Junior has left the garden rake out overnight! Conversely, in the sections allotted to trade booths, gardeners who came to the show to obtain the latest information on seeds, bulbs, tools, fertilizers, sprays, and equipment, could shop at will without being carried along in the lines of floral exhibit viewers.

The theme of the Boston spring flower show was "Gardens the World Over." I cannot begin to describe all of the many exhibits dating from the "Hanging Gardens of Babylon," 600 B.C., to the contemporary.

I was most impressed with the extraordinary exhibit of Alexander Heimlich of Woburn, Massachusetts, featuring the Himalaya Mountains with a glimpse of Mt. Everest in the background. This gigantic masterpiece of horticultural showmanship, which occupied the stage in the grand hall of the building, was cited for its educational value and won the coveted Bulkley Medal of the Garden Club of America. The plant material, depicting alpine flora in a natural setting, was, with but few exceptions, authentic.

Perhaps because plans that I had made recently to visit the Botanical Gardens in Arizona have gone awry, I found great interest in the "Arizona Desert Garden." This exhibit, designed by F. I. Carter and Sons, won the President's Cup as the most meritorious exhibit in the Show. I understand that Mr. Carter traveled hundreds and hundreds of miles to gather the material for this spectacular garden. Now I want to go to Arizona more than ever!

Again, my personal feelings must enter into this report, for the next display which caught my eye and heart was the "Cape Cod Garden." I hope one day to retire to Cape Cod, and right there in that hall was the retirement home of my dreams. Featuring a cottage and garden, the exhibit was staged by the Cape Cod Nurseries of Falmouth, and the plant material was typical of the Cape. I don't want the years to go along any faster than they already seem to be going, but with that long-time dream of mine now a definite picture in my mind, the years will surely pass more pleasantly.

I have always thought The New York Botanical Garden's azalea plantings most beautiful, and I hope my coworkers will understand when I say that the "Azalea Exhibit" at the show was equally appealing to me. This series of bold splashes of deep pink and chalk

The "Arizona Desert Garden," the most meritorious exhibit in the flower show.

white plants, many of which originally came from Japan, were from the collection of Mr. and Mrs. John S. Ames, President of the Society. The Ames received the Gold Medal of the Pennsylvania Horticultural Society for this garden, which was described as the exhibit showing the highest standard of cultural perfection.

Other exhibits which struck me as little less than fabulous, were the French parterre garden, an Italian pleasure garden, a charming English garden, and a Spanish patio. The latter was so staged in the hall that by the time I arrived at this exhibit, the late afternoon sun shone down on it to give the very definite hazy, lazy feeling of an extremely warm afternoon under the Spanish sun. I really did want to break rules and take a siesta there.

To coincide with the spirit of the show, the Garden Club Federation of Massachusetts presented a series of "Flower Arrangements Around the World." These separate displays featured an enclosed Near East courtyard with fresh cut plants and fruit; a British Isles Georgian living room with appropriate fresh cut plants; a contemporary American living room, with foliage cuttings predominating, to complement the modern feeling of the room; an Oriental living room with a Tokonoma (ornamental recess in a Japanese living room), teakwood tables and flowering branches; and a terrace overlooking the Mediterannean . . . here wall containers featured plants, fruits, and vegetables.

(Continued on page 104)

Magnolias

Azaleas

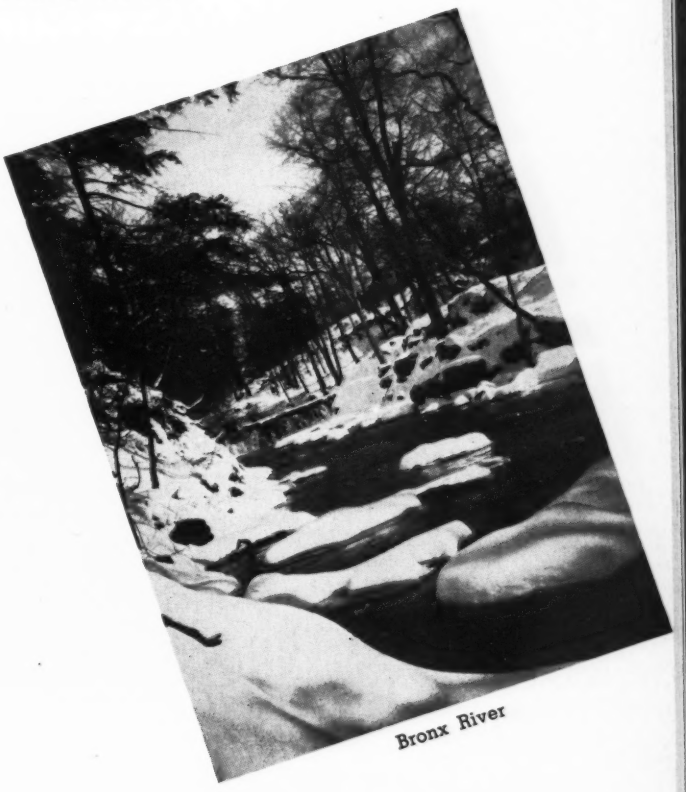
The Four Seasons

at

The New York Botanical Garden

Bronx Park, New York, N. Y.

Hemlock Forest

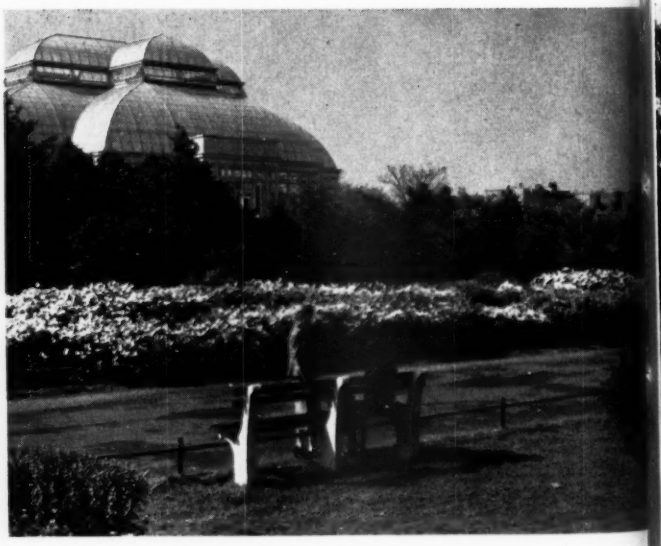


Bronx River

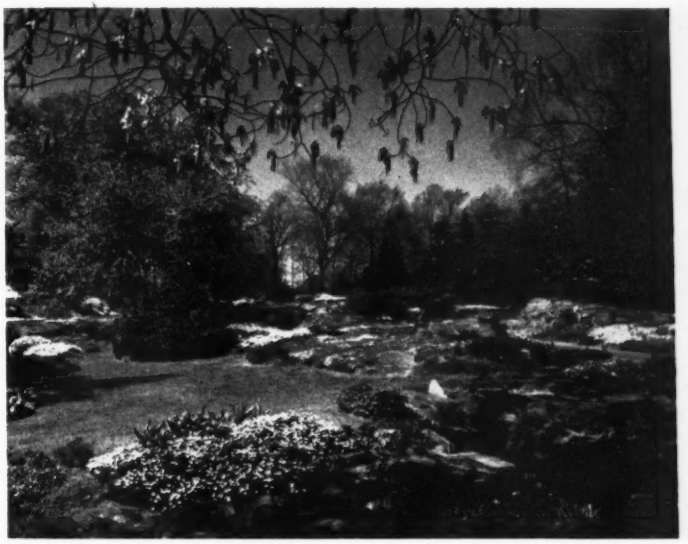
Seasonal Flowering Displays

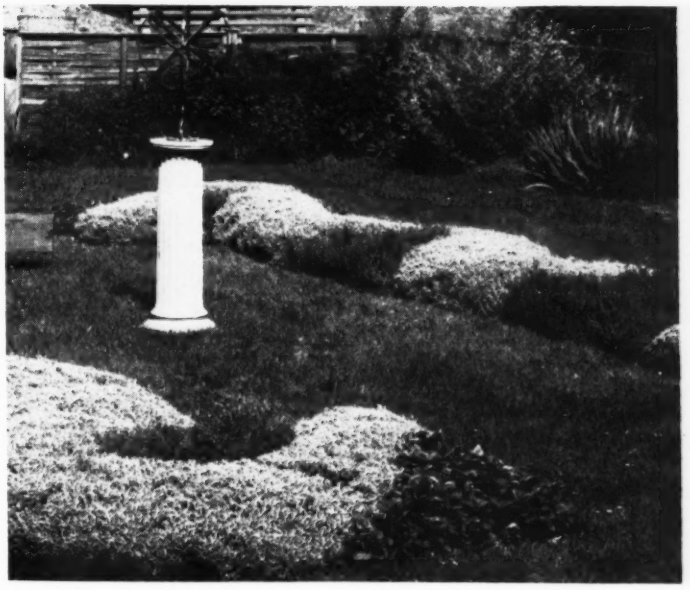
Cherry Trees
Narcissi
Magnolias
Lilacs
Rock Garden
Azaleas
Rhododendrons
Iris
Perennial Borders
Peonies
Herb Garden
Rose Garden
Water-lilies — hardy
Water-lilies — tender
Annual Borders
Chrysanthemums

Conifer Collection
Hemlock Forest
Pinetum
Conservatory



May June Jul. Aug. Sept. Oct.



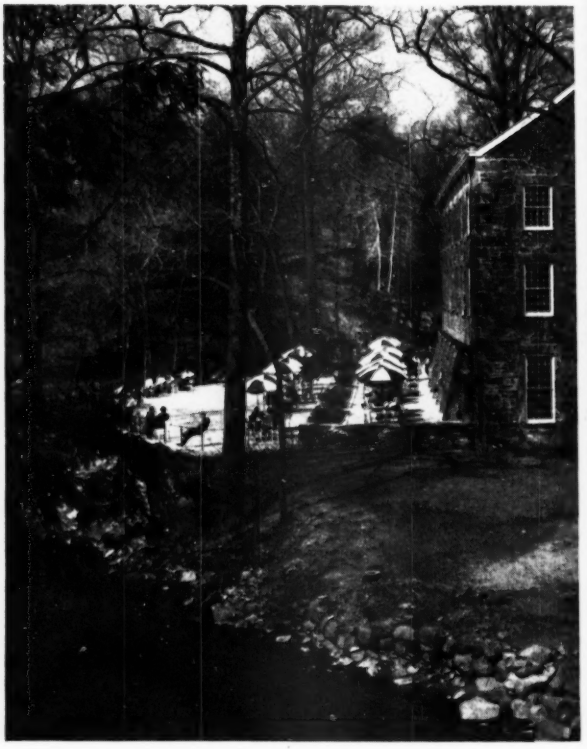


All Year
All Year
All Year
All Year

Special Flower Shows in the Conservatory

Special Exhibits in the Museum Building

Restaurant and Meeting place



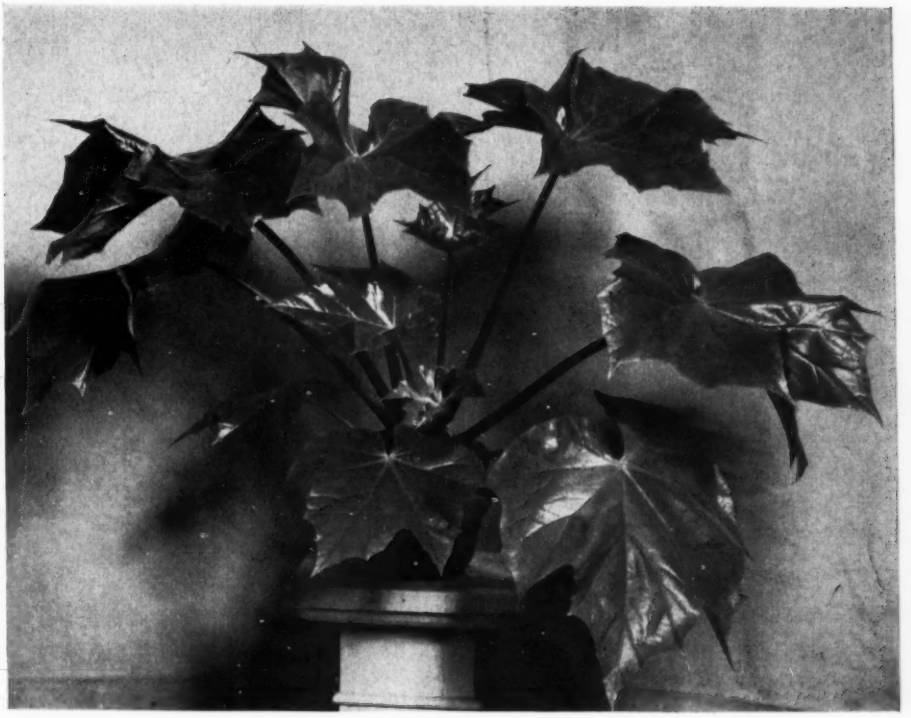
COMPANIONS in GLASSHOUSE 'TENBYTEN'

By Elsa Fort

EVERYONE WHO ENJOYS growing plants and flowers has a dream of some day owning a glasshouse, thus bringing summer into winter. I had such a dream for many years, and then, about four years ago, it was fulfilled. Begonias are my hobby, and I wanted the glasshouse in which to grow Rex and other very unusual varieties of begonias and to hybridize for new varieties.

I named my glasshouse "Tenbyten," for that was the floor size. Soon plants other than begonias began to find their way into "Tenbyten," although the begonias continued to occupy the major part of the bench space. Lovely ferns, davillias, were hung side by side with the scandens begonias; and when the latter bloomed, their long pendulous clusters were quite exotic among the fern fronds. In one corner, which houses the water tap and washing box, I had a beautiful *Anthurium crystallinum;* though raised high on an inverted pot, its gray-green leaves, like silvery velvet, and fascinating with their geometrical markings of green-white, almost touched the bench. The bloom is so different from the well-known *Anthurium Andraeanum.* All the beauty of *A. crystallinum* lays in the foliage; the bloom is just an inconspicuous little "tongue" without a colored shield.

Several years before "Tenbyten" came into my life, I had a catesetum hanging in the bay window of my home. This orchid did bloom there; but when moved to the glasshouse bloomed more frequently, and the flowers were larger and more beautiful. Several other orchids, many of them sick, sad, and sorry-looking plants, were nursed back to health in "Tenbyten," and the following year they bore beautiful flowers. They needed the lovely begonias on the bench beneath the shelf where they were living in long built-to-fit pans; for while we all admire orchid blooms, the foliage at its best is rather unsightly and companion plants offset this unattractive feature.



Begonia 'John R'. This and the two begonias illustrated on page 97 were grown by the author.

Ceropegias soon made themselves at home in "Tenbyten" with their interesting leaves and stem bulbs hanging downward. They bloomed many times, freely producing their unusual little parasol-ribbed tops, with necks so small that they have to be pollinated by ants running in and out in quest of nectar. The seeds are contained in little pods, like those of the milkweed and asclepias, which burst open to scatter them.

One hot, dry, hard-to-reach corner has a long iron box in it, filled with cuttings of geraniums and of sweet-scented miniature-leaved varieties, to carry them over till spring and outdoor planting time. This corner is really ideal for geraniums. The orchids, begonias, and ferns call for humidity, plenty of moisture on the benches, but the geraniums thrive on hot sunshine next to the glass and a minimum of water and attention. They bloom all winter and one in particular is most beautiful. This is the variety that the Californians train to their verandahs.

I was very fortunate in acquiring several tripods with heavy metal legs and a flat top; the tops of the legs are bent up to hold a pot in position. These tripods are about two feet in height and very satisfactory for large plants, elevating them well above other plants on the bench. A Rex begonia on such a stand has ample space to show off its leaves to their full beauty.

This year "Tenbyten" had an addition—another ten by ten attached to it. The same watering and heating systems are used. It was not long before the new addition, too, was filled — with plants hanging, sitting on top of pots, under benches. In fact, there is a plant wherever a spot can be found. It is still "Tenbyten," for that was the name of my first love and now is the name of the glasshouse grown up. In the aisles are two standard heliotropes, a standard fuchsia, and a large tub of strelitzia, with its strange, orange and gold "Bird of Paradise" flowers.

I use the under-bench space for propagating leaf cuttings, stem cuttings, and seed starting. One section of the under-bench space is filled with gloxinias growing under fluorescent light, where there is sufficient room for the leaves to spread. However, streptocarpus with quite long horizontal leaves and smaller flowers than those of its relatives, the gloxinias, do better bench grown.

I have found that ordinary chick feeders, which the farmer uses for baby chicks, and which may be pur-

(Continued on page 97)

OUR FLOWERING TREES

By R. R. Fenska

Cherry trees are universal favorites, whether around the Tidal Basin, Washington, D. C., in Branch Brook Park, Newark, N. J., or, as here illustrated, at The New York Botanical Garden.

WHEN YOU THINK of springtime in the nation's capital, what is imaged in your mind? Of course, it's the cherry trees around the Tidal Basin. When you drive along the parkways in Westchester County in New York State, it's the flowering dogwoods which inspire you. And in Rochester, New York, it's the magnolias that delight you. Without such beauty, the countryside would be rather drab.

When a landscape architect selects trees for a landscape plan, he considers the floral effect of the trees for a particular location. Following are some which rank among the best.

Flowering dogwood *(Cornus florida)*. This tree meets just about all the requirements one could ask for both in natural beauty and in landscape effect. In nature, it grows as an understory to taller trees and enhances the park-like or woodsy effect. In the hands of the landscape architect it may be used in almost any situation desired.

The dogwood is a typical small to medium tree with a well-developed oval or spreading crown or head. Its method of branching permits the tree to be pruned without giving it an artificial look. The foliage is dark green in early spring and summer, turning to a crimson or combination of the two colors later in the year. In spring the so-called "flowers" usually cover the entire crown of the tree before the leaves appear. In autumn the attractive red berries are the favored food of many birds. Its characteristic shoe-button flower buds make it easy to identify in winter. The dogwood is about as free from damage by sleet or snow as any tree we have. All this adds up to what has been said many times, "The Lord could have made a better tree than the dogwood but He didn't."

The pink dogwood *(C. florida rubra)* is similar to the species, except that the flowers occur in various shades of pink. However it is not as hardy in its northern range as the white dogwood.

The flowering crabapples are famous for their profusion of flowers in the grand manner. Some of the flowers have a delicate violet scent, while others are really fragrant. The fruit is attractive and varies in color, size, and seasonal appearance on the different species and varieties; it is a prime favorite with many birds. The foliage also varies in shape and size and comes in different shades of green. Actually, there is such great variety among the different species that no two persons will agree which are the best trees. However, the following are among those for which many people have expressed a preference:

Bechtel crab *(Malus ioensis plena)*. This is a small bushy tree with attractive foliage. The flowers are double, rose-pink, about two inches in diameter, and possess a delicate violet scent. The fruit is greenish yellow. Some specimens are thorny. The Bechtel crab is planted all through northern and eastern United States and into Illinois, where it was first brought into cultivation by a nurseryman named Bechtel.

Arnold crab *(Malus Arnoldiana)*. This hybrid originated in the Arnold Arboretum, Jamaica Plains, Massachusetts. It is a low spreading tree with a compact crown and seldom attains a height of more than ten to twelve feet. The flowers are of the single, or semi-double type, pink at blossom time but gradually turning white, and they droop gracefully in long-stalked clusters. The fruit, a small pome, is yellow.

Chinese flowering crab *(Malus spectabilis)*. This was the first of the Asiatic crabapples introduced into this country, about 1780. It may grow to a height of twenty-five feet, as a shrubby tree. The leaves are smooth and glossy; the flowers are pink to rose-colored, of a semi-double form, and distinctly fragrant; the fruit is small and pale reddish yellow.

Japanese flowering crab *(Malus floribunda)*. Usually a small tree with a spreading crown, this sometimes reaches a height of twenty-five feet. The fact that it is resistant to cold and drought makes this crab a favorite with landscape gardeners for use in exposed locations. In spring the buds are bright pink and contrast with the flowers, which are pink at first but gradually fade white. Although the flowers are small and of the single form, their profusion is a striking feature. The pea-sized fruit is red and yellow.

Sargent crab *(Malus Sargentii)*. This is the smallest of the crabs and seldom attains a height of more than eight feet. Occasionally, it is twice as broad as tall and looks more like a shrub than a tree. The Sargent crab is especially suitable for a small lawn or a rock garden. The flowers, which are single and snowy white with yellow anthers, occur in profusion. The fruit is dark red, very attractive, and remains on the tree until spring.

Siberian crab *(Malus baccata)*. Where a very hardy tree is desired, this is the species to plant. At maturity it

Magnolia Soulangeana flowers in late April at The New York Botanical Garden.

has a pyramidal shape. The flowers are single and white; the fruit is about the size of a cherry and red or yellow in color.

Tea crab *(Malus theifera)*. This species has a stiff, erect form and reaches a height of fifteen feet. In the spring every branch is covered with fragrant, rose-pink blossoms which gradually fade white; they are usually single but occasionally appear as semi-double. The fruit is greenish yellow with red cheeks.

Southern crab *(Malus angustifolia)*. This crab is a native of southern United States, where it grows to a height of twenty-five feet with an open and thorny crown. Like all trees with briars and spines, it provides shelter and nesting places for birds safe from cats; in addition, it produces food for them. The leaves are slightly lobed; the flowers are single, light pink, and the latest to bloom; the fruit is yellow-green.

The hawthorns are closely related to the crabapples. They constitute a group of picturesque, small trees — thorny, dense, and round-headed with stiff, crooked branches, attractive foliage and floral effects, and showy fruit. Their sharp thorns provide protective shelter and safe nesting places, as well as food for birds. The thorns are very hardy, thrive in almost any soil or exposed location. They provide beauty of color and landscape value throughout all seasons of the year. Of the many varieties in this country, the following three are the most popular from the standpoint of landscape value and floral effect. They are all easily transplanted.

English hawthorn *(Crataegus Oxyacantha)*. This is the true English "May tree" or hawthorn and seldom attains a height of more than fifteen feet, with spreading branches. The leaves are three to five-lobed and toothed; the white flowers occur in large clusters; the fruit is scarlet and contains two stones in each berry. Men who have spent a lifetime in the identification of these trees are still confused.

Paul's thorn *(Crataegus Oxyacantha Paulii)*. This variety with its clusters of brilliant red, double flowers is one of the choicest ornamental trees in existence. In the fall the leaves turn a brilliant orange and scarlet. The red berries remain on the tree all winter, if not eaten by birds. This makes an excellent tree for the small dooryard garden or close to the house.

Cockspur *(Crataegus Crus-galli)*. A taller tree than either of the preceding, the cockspur reaches a height of thirty-five feet. It has a wide spreading head, slightly drooping branches and slender sharp thorns. The leaves are rounded at the top. In the spring this tree is a mass of white flowers; in autumn the clusters of brilliant red "thorn-apples" are matched only by the orange and scarlet of the foliage. No other hawthorn possesses such thick, glossy foliage. This species is sometimes trained as a hedge.

The Japanese flowering cherries are world famous. The trees in Washington, D.C., around the Tidal Basin, are a tribute to President McKinley's wife who inspired this planting. In Japan, when these trees are in bloom, the whole nation pays tribute to beauty in the cherry blossom festivals. The flowers vary in color from white to rose-pink and may be of the single or the

The dogwood, *Cornus florida*, is one of the most beautiful of all flowering trees.

double form; some are fragrant, others are not. The fruit also varies in size and color. Japanese trees may be selected which have a pyramidal upright crown, are vase-shaped, or are of the weeping type. Their landscape value is most effective when they are used with a background of evergreens as contrast for the pink and white flowers in spring. They will thrive wherever the ordinary cherry grows. The following are among the most striking varieties:

Tokyo cherry *(Prunus yedoensis)*. This is the species around the Tidal Basin in Washington, D.C. Its broad spreading crown makes it the ideal tree for such a location. Early in spring the buds are red; they open into the slightly fragrant, delicate pale pink flowers. These occur in clusters of two to five and so dense that they almost cover the branches. The fruit is small and a shiny black. The weeping variety of *P. yedoensis* has slender, pendulous branches.

Spring cherry *(Prunus subhirtella)*. This is a low shrubby tree with a short thick trunk and slender arching branches; it is slow growing and long lived. The spring cherry is the first to bloom. The clusters of small, single, light pink flowers are produced in profusion along the twigs. They are identified by a shallow notch at the apex of the petals. The weeping variety of this species has been created by grafting. The long, slender, pendulous branches often reach to the ground and in spring are covered with a cascade of pink blossoms.

Oriental cherry *(Prunus serrulata rosea)*. Those who see this tree in spring for the first time, when it is laden with its double, dark pink and fragrant flowers, are struck with its great beauty. This tree varies from that of a slender columnar to a spreading form; there is also a weeping form with long, slender, pendulous branches. Some varieties are suitable for formal plantings, while others are fine for gardens with limited space. Under average conditions, the Oriental cherry makes a vigorous growth. The flowers are from one and a half to two inches in diameter and occur in clusters of two to four, intermingled with dark green foliage on some varieties and bronze-green on others.

Sargent cherry *(Prunus serrulata* 'Sirotae'). This is the only flowering cherry with pure white, double flowers in cultivation in America. The flowers are about one and a half inches in diameter, fragrant, and occur in clusters of two to five on short stems. The shape of the crown varies from a pyramidal to a round head. It is, indeed, a very handsome tree.

There is a wide range of magnolias, both native and exotic, in cultivation in this country. Some are small shrubby trees, while others are specimens of the timber type. They are at the forefront among the noblest and best of our flowering trees, especially the cultivated hybrids developed from Chinese species.

The redbud, *Cercis canadensis*, can be planted effectively with dogwood, larch or red-cedar.

All have showy flowers and distinctive foliage. In fact, the leaves on some magnolias are the largest simple leaves found on any tree in this country. The flowers are produced in lavish quantities, range in color from white through yellow and pink to purple, are fragrant, and transform the trees into a spring spectacle that commends admiration for nature at its best. And the cone-like seed pods, containing the oval red seeds, are also distinctive among flowering trees. In the City of Rochester, New York, there is probably as large a collection of magnolias as anywhere in this country. In two of our southern states the flower of a magnolia tree has been selected as the state flower.

Of the many magnolias the following are among the most popular:

Star magnolia *(Magnolia stellata)*. This is a small shrubby tree—the first to bloom in spring. In fact, the flowers appear before the leaves. They are about three inches in diameter, white with pinkish streaks on the outside, and star-like in shape; hence, the tree's common name. The young twigs and the buds are covered with a dense down. Although it blooms early and at a young age, it is not especially hardy and must be grown in a sheltered place. Variety *rosea* has pink-tinted blooms.

Saucer Magnolia *(Magnolia Soulangeana)*. Although this hybrid was first produced near Paris, it is one of the most common flowering trees in eastern United States. It is usually a shrub-like tree of several small trunks and blooms early in spring after the star magnolia. The erect flowers range from pure white to deep purple and also come in pink and white combinations. They appear before the leaves and usually cover the entire tree with a gorgeous array of "bell-shaped" flowers. Many varieties or hybrids have been developed from the species.

Southern magnolia *(Magnolia grandiflora)*. No list of outstanding flowering trees would be complete without the "Bull Bay," as it is often referred to in the South. Selected by the Louisiana Legislature as the state tree, and by the school children of Mississippi for their state tree, it is undoubtedly the grandest of the magnolias. The leaves are a lustrous evergreen, and the huge eight-inch, pure white flowers, like giant roses, cast their heavily spicey fragrance far and wide. Unfortunately, this tree is not hardy in our northern states.

Empress tree *(Paulownia tomentosa)*. Of all the flowering trees in this country, this one is especially distinctive. It was named in honor of Anna Paulowna, princess of the Netherlands, because she admired it so much the first time she saw it in bloom. It is a medium-sized tree attaining a height of forty feet. The conspicuous flowers appear before the leaves; they are tubular funnel-form, pale violet with dark spots and yellow stripes inside, very fragrant, and are borne in terminal clusters sometimes a foot tall. The pods remain on the tree all winter. The large leaves resemble those of the catalpa tree. This species makes an excellent specimen tree for the lawn; it has also been used as a street tree in our southern states. It will tolerate salt air

The Siberian crab, *Malus baccata*, is very hardy.

and grow near the ocean, but not in places exposed to cold winds. It is practically free from common insects and diseases. Unfortunately, paulownia is not hardy in northern United States.

Horsechestnuts *(Aesculus Hippocastanum* and *carnea)*. Both the white and the red horsechestnuts have showy flowers. In Paris there is a fine row of red horsechestnuts along one of the avenues, which presents a striking picture because of the dark green foliage, as well as the red flowers. Even the large panicles of white flowers of *A. Hippocastanum* are impressive. The pyramidal crown makes a perfect background for the effective display of the large candle-like blooms. The chief requirement of the horsechestnut as a street tree is adequate water supply to prevent prematurely brown foliage. Some think the litter from the tree makes it objectionable for such use. The chief enemy is leaf blotch, a fungous disease which is controlled by proper sprays.

Redbud *(Cercis canadensis)*. This is the tree which the citizens of Oklahoma have selected as their state tree, although Dallas, Texas, is also known as the "Redbud City." The redbud is a small graceful tree with a rounded head, sometimes growing to a height of twenty-five feet. In the spring before the heart-shaped leaves appear, the branches are covered with clusters of small purplish pink (or white) pea blossoms. The fruit is a thin pea pod. It is the tree to plant in the southern regions of the United States, due to the fact that it will endure drought, heat, and alkaline soil. Landscape gardeners employ this tree in combination with a background, such as larch, red-cedar, or dogwood, in order to bring out the striking beauty of the flowers. It is a difficult tree to transplant. In some sections it is referred to as "Judas Tree," since legend has it that Judas hung himself on this kind of tree.

Golden-rain tree *(Koelreuteria paniculata)*. This is a handsome tree, seldom more than thirty feet tall, with a crooked trunk and a broad crown. It is also known as "Pride-of-India," "Varnish Tree," and "China-tree." The flowers are brilliant yellow with orange-red markings at the base, and are borne in enormous panicles at the end of the twigs. Late in summer bladder-shaped pods, containing three black seeds, hang on its branches for many weeks. It is used for landscape planting in locations subject to dry, hot winds, in alkaline soil, and in city conditions. It has a compound leaf, a foot or more in length, composed of many small leaflets. An excellent lawn tree, though short-lived; it is hardy in our northern states.

Golden-chain *(Laburnum alpinum)*. Also known as Scotch laburnum, this native of Europe is frequently planted in the eastern half of the United States. However, in the northern part, it must be planted in a protected place to avoid damage during periods of very low temperature. It is a small tree up to thirty feet in height, with a narrow crown. In spring, when in bloom, it is one of nature's delights. Its striking features are the long, pendulous clusters of bright yellow, pea-shaped flowers against the dark green, trifoliate leaves. Its size and narrow head make it an ideal tree for the small lawn. It is said that the flowers, fruit, and seeds are poisonous.

The candle-like inflorescence of the horsechestnut, *Aesculus Hippocastanum*, is impressive.

SCHOOL GARDENING

A Factor in the Control of Vandalism and in Promoting Juvenile Adequacy

By **Romaine F. Button**

FOR A LONG TIME NOW, the "we view with alarm" group of social reformers has been voicing its real and imaginary fears on every subject concerning the human race. It is not my purpose to determine whether there is any basis for this anxiety. I do suggest, however, that the knowledge of this group transcends its performance, when it gives voice to fears and then fails to follow up its analysis with some constructive form of remedial action. I have in mind the current widespread complaints about vandalism and juvenile delinquency and the absence of a scientifically determined remedial program, even after years of discussion of this topic.

The papers have been reporting a juvenile crime wave which unquestionably exists, and we find columns in papers from the same city devoted to a description of youth efforts and activities which will promote a rising social consciousness and an intelligent, observant adjustment to the millieu in which youth finds itself. Competitive games in playgrounds are good as far as they go, but the sense of doing something useful, of doing that which is one's own project is equally necessary for the rounded development of character.

If we can develop in the young citizen a sense of the pride of achievement that marks the production of something worthwhile and the realization that his neighbor has a right to the same satisfaction, we shall have citizens, both adolescent and adult, possessed of an experiential background that makes true social consciousness possible. They will respect the rights and property of their fellow citizens. In short, we shall have neighbors, both young and old, who will be inclined to curb vandalism and to promote the "Golden Rule."

Vandalism is basically an exhibition of bad citizenship, or a manifestation that education in the social sciences has failed to achieve its goal. Nowhere in school experiences is there a better area than the school garden for individual and group learning of good citizenship. Here we learn of bulbs and plants from many foreign countries; seeds from other states; attractive and consequently more valuable property in the community; a consciousness of ownership; a respect for the rights and efforts of others; and a realization of the reward of labor. All of these help produce better citizens—and better citizens means less vandalism or none at all.

A school includes more than a building. The lawn, yard, and garden are equally a part of its educational facilities. When a building is run down, neglected and uncared-for in appearance, it invites vandalism which is a demonstration of lack of respect. The outward appearance of the building is of great importance. An untidy front yard, dirty play yard, or neglected garden is of equal or even greater importance in engendering loss of respect.

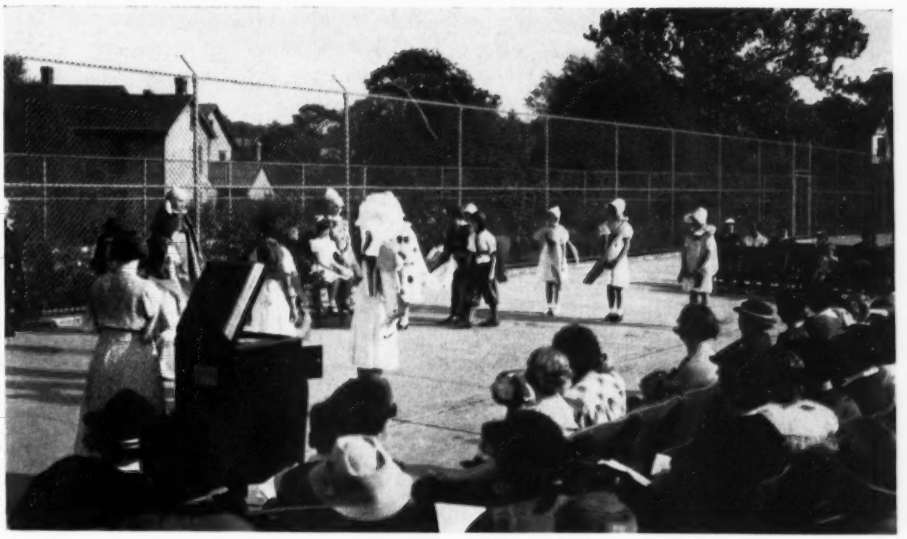
A school garden is an outdoor classroom. Young gardeners, chosen ideally from the fifth and sixth year, but often including younger students, meet and work in the garden, culminating in activity ideas which have been developed in the classroom. Here are creative activity and work experience, long recognized as essentials to learning.

As a classroom subject, gardening offers correlation with other subject areas in the curriculum. In science we learn of agronomy, botany, biology, conservation, health, diet, physics, and chemistry. In social studies we study France, The Netherlands, and other foreign countries, other states of our own United States, community problems of appearance and property values, good citizenship by cooperative effort and honesty. Arithmetic may enter in linear measurements and square areas, seed counting and percentage of germination. Art classes are furnished with flowers for arranging and painting as well as an attractive area for sketching. Reading and writing about plants and spelling their names are inspirational means of acquiring information and conveying experiences to others.

A garden needs no justification for existence, but these aspects bring into focus its importance as an educational unit.

As a part of the school it is under the immediate supervision of the principal. Some principals have and some have not an interest in gardens. I have observed that those who have any gardening interest or experience, transfer that interest to the school garden. Those without such background often

Give a child a bulb to plant, to care for, to own.



When the neighborhood shows an active interest in school gardening, there is no vandalism.

fail to realize this potentially rich area of learning. Once the principal wholeheartedly supports an active gardening program, vandalism is on the way out.

A teacher is selected or elected to be in charge of the garden. Since the garden is a classroom, it should have a teacher who has an interest in it, some knowledge of gardening, and the ability to handle children. It should not be given to just any teacher who may have a lighter load, or a few free periods.

The children who do the gardening should be carefully chosen. Because of the nature of the activity, it is seldom advantageous to select gardeners from below the fourth grade; fifth and sixth year children are usually preferable. Because of the well recognized therapeutic values of working with soil, gardening is especially effective when emotionally disturbed or asocially inclined children participate. Since these children are very often closely connected with acts of vandalism, they are the ones with whom we are most concerned, if vandalism in a school and neighborhood is to be controlled.

Gardening creates peace of mind and gives spiritual refreshment.

Children usually mirror, though often with a surprisingly distorted magnification, the reactions of adults. If the principal and teacher feel and show a genuine interest in the garden area, so will the children. If the teacher has any slight feeling of resentment as being "elected," then the children sense it and may react with less than adult inhibitions, towards a less than desirable situation.

Children like to get outdoors and the garden hours are looked forward to, as an escape from studies. They are, as we in our mature wisdom know, only transferring the scene of learning to a more exciting happier situation. Nonetheless, they are predisposed to like the experience; and if it is handled properly, it should lead to a valuable experience in real life learning and a decrease in vandalism.

Vandalism is caused basically by several factors among which is a sense of not belonging or not having. We find the worst and most consistent examples of vandalism in those areas that lie near low-cost housing developments. Here are large numbers of children who have less of this world's riches than others—and they know it. They have a social inferiority complex because they don't belong—they are grouped on a lower social scale than the children in high-rent apartment houses and they know it. And—they resent it.

Robert Moses in a report on vandalism stated that the upper East Side, lower Seventh Avenue, and Southeast Bronx had very bad records of acts of vandalism on the New York Public Library property. Custodians of schools report that after low-cost housing developments have been built, vandalism has increased enormously.

School gardens in such areas have suffered along with the buildings; but where gardens have been maintained by

The champions are proud of their successful garden.

a principal who believes in their value, we have noted a sharp decrease in vandalism after a short time. Gardens are an ideal place to learn about the rights and privileges of ownership and for developing in children a feeling of invested effort. Children do not destroy something in which they have an active ownership and from which they derive satisfaction from invested effort.

Failure to gain a sense of achievement leads to an active dislike for many activities. Active dislike will often cause less inhibited children to destroy or damage the object of dislike or its surroundings. Here again gardening presents an ideal situation. Achievement in a satisfying degree is comparatively easy. Anyone can plant onion sets, and they always grow. Radishes come up quickly and can be eaten. Even CRMD's can learn the difference between weeds and rows of vegetables, and the activity is one which does not tax their span of interest. Here is activity that appeals to the child who knows so little of softness and gentleness, who is accustomed to concrete and asphalt and has never watched willows turn gold nor heard spring peepers tell of coming spring.

The lack of a sense of security is usually found in young vandals and delinquents. Possibly the home is broken, or the family has been on relief so consistently that there is no assurance of a secure future. Here, again, gardening offers a basic solution.

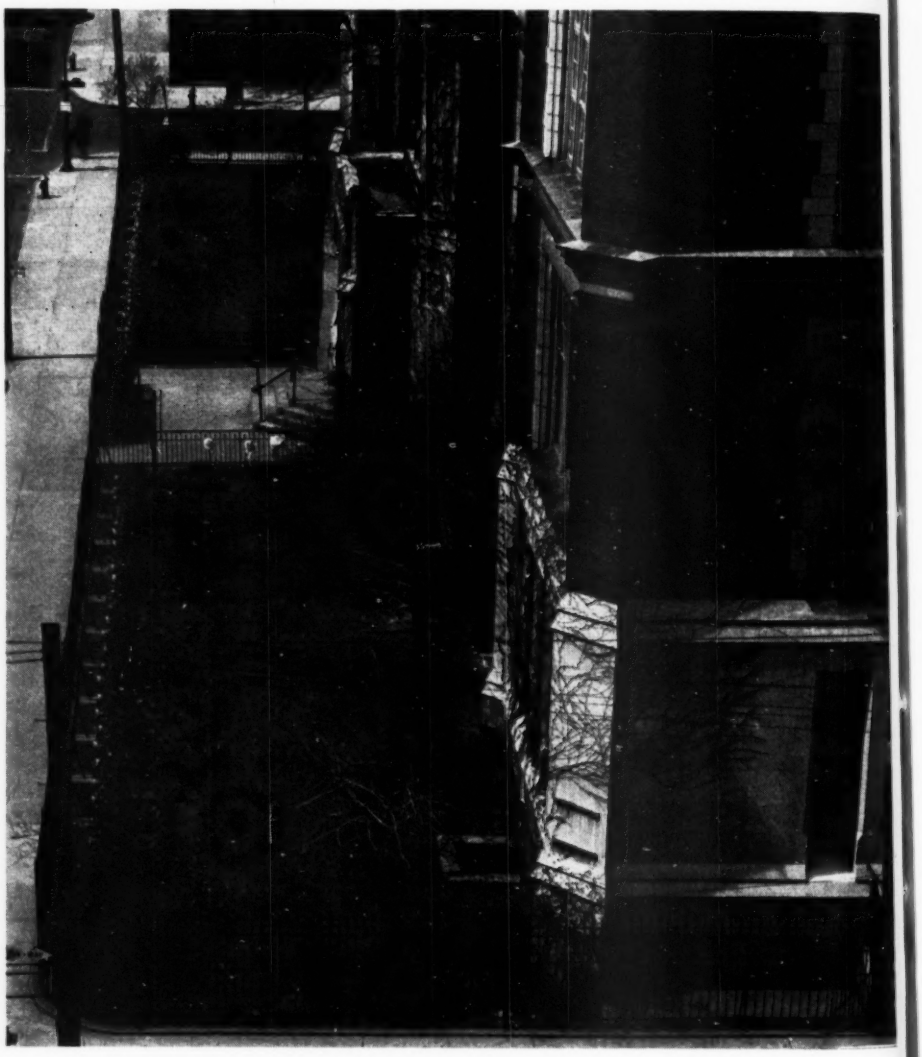
Deep inside even the most confirmed city dweller is an atavistic urge to secure food—to feel that he is able to provide food for his future. Gardening teaches him how to dig in the soil; he feels it with his hands, plants seeds, harvests and eats the results of his labor. It is the same urge that later will make him want to buy a place in the country. Along with his desire to provide food is an innate love for beauty—and gardening lets him plant and grow beautiful flowers. If you could watch the faces of some boys, who are classed as rough characters, when their plants bloom, you would say that here is a panacea for all cussedness.

One of the chief causes of vandalism is the revolt of youth against organized adults and their institutions. Youth does not rebel at its own ideas; and herein is the nuclear idea behind many eminently successful programs for controlling or stopping vandalism. Let children think it is their own idea. Give them the responsibility of having and keeping a clean garden.

Youth leaders can be made to feel that they are capable of making striking and unique contributions in their own right. An atmosphere of challenge for the pupils is produced and they respond by trying. Anyone who tries gardening, given wise adult guidance, succeeds. If publicity and recognition of effort are given to the children gardeners, all of the factors for real-life learning are stimulated—and experience has shown that you don't have vandalism.

I keep remembering a tiny strip of soil about seventy square feet in all on the edge of the playground at Public School 10, Manhattan. The soil is poor and is usually covered with a layer of fly-ash and soot. The sunshine is scanty. The background is a brick tenement wall. There is no fence, but none is needed. Each class is permitted to plant about a dozen seeds. Each class goes to the garden and while a favored few are allowed to plant the precious seeds, the others watch. Just let anyone try to step on the garden. Vandalism? Never. It's their garden. Each sprouting seed is watched and reported on. The children nearly smother their garden with attention—and they love it to death. The whole school has a sense of pride and of ownership in a community garden, a satisfying reward for its labor.

There are other means of counteracting and preventing vandalism through gardening. A garden "Sanitation Squad" can be organized. This is a group of boy leaders, who go to the garden every morning to clean it up. While classes are lined up in the yard, before school opens, is the best time for their



Here is a school which is proud of its appearance. Although it is a play street and balls enter the garden—and children after them, there is no vandalism.

performance. They have a basket and rake; they pick up any noticeable papers or debris, rake out any footprints across the seed beds, reset any stakes and string lines, and generally give the garden a quick fix-up.

This squad may be presented to the student body in assembly and its purpose explained. Vandalism is less likely to occur in a cared-for neat garden.

Close cooperation of neighbors immediately adjacent to the grounds may be sought. A garden committee is usually chosen to visit these neighbors. The committee may be equipped with a mimeographed or semi-official appeal or may take letters written as a class project. Neighbors are asked to keep watch over the garden and to notify the police if any trespassers are observed. Neighbors like to have an attractive school and garden; it makes their neighborhood more beautiful and, hence, more valuable.

The local precinct can be visited or called by the principal, and prowl car officers may be asked to keep an eye on the garden. If the names of any trespassers are taken, it usually stops further forays.

Signs that announce "this is our garden, please don't harm it" may be made and put up by the children.

Some school garden clubs have organized patrols and groups to protect their gardens from outsiders but usually, if the garden is clean, attractive and cared-for, vandalism vanishes.

Adults in the immediate area often will volunteer to assist in the garden. Indeed, they sometimes are so eager for a chance to work in the garden that they try to do it all. In any case, neighborhood interest runs high when children undertake to improve the appearance of the school area, and the pride of accomplishment goes home with the children and extends through the home and community. This is good for all three, the child, the home, and the school community.

The architects designing new schools for the New York City Board of Education have considered one cause of vandalism in locating gardens in recently constructed buildings. The gardens are not located adjacent to the playground, but are next to the kindergarten area where there will be fewer large boys and fewer balls to invite non-gardening children into the area.

The Board of Education has recognized the importance of a successful gardening program by raising the appropriation to pay teachers for supervision of school gardens during the summer. This means gardens are kept attractive, even after school closes.

More can be done. There could be more courses to prepare teachers for gardening. There could be additional supervision during the school year. There could be more publicity about the benefits to the child, the school, and the community from a well-run school garden program.

Begonia 'Fernando Coastal' No. 2365

Give a child a bulb to plant—to care for—to own. Let him plant some seeds, even if only in a pot of soil. It is a small beginning, but a beginning it is. It gives him an opportunity to feel what he cannot express, that he owns something, that through his own efforts he contributes something. That something, though small, is useful to the sum total of the society of which he senses himself to be a unit. It is a tiny expenditure compared to one day's outlay in time or money in our prisons and reformatories. But what a return it brings, what an increase in the power of intelligent observation and creative action, both on the part of the youthful individual and the school group.

Let us extend and ampilfy the opportunities of individual gardening experience for which our city-bred, nature-hungry children yearn. Let us use it as one step in the direction of channeling youthful energy into tried and proven activities. Let us eliminate "adult indifferency," promote juvenile adequacy, and watch juvenile delinquency disappear.

COMPANIONS (from page 89)

chased in any feed store or supply house, are ideal to hold small pots of plants which are being rooted in sand and peet. The feeders may be readily moved from one place to another for better and quicker growth, and the proper amount of moisture can be more easily controlled. Being quite narrow, the feeders also fit into small spaces. The bottom is filled with sand, and the pots retain their moisture better than when watered from above.

Shelves, of course, have been set in every available part of the glasshouse—these are ideal for scandens begonias, when there is no space for them to hang from the top. Many of the rhizomatous begonias also look particularly attractive on the shelves, filling the space with their over-the-pot growth.

The hanging baskets in "Tenbyten" are made of three-quarter-inch cellar window wire, which is cut to fit the height of the pot. In cutting the length of wire to go round the pot, allowance is made for the sphagnum moss to be filled in around the pot. Then, a circular piece of wire is cut to fit the bottom of the pot. The sides of the basket are laced with wire and the circular bottom fitted in and laced with wire, to hold the basket together. Four wires are attached to the sides on which to suspend the basket. Such a basket is fine for begonias and ferns, for it will fit in a bucket of water and the moss may be kept moist with little drip.

Begonia 'Brocade'

MEET THE LATIN NAMES

By Emily Gibson Latham

THERE IS A LARGE number of Latin names for which there are no English equivalents. We use these names every day as a matter of course without thinking of their origin or possible meaning. Yet in their origin we may trace the fascinating history of plant discovery and importation from country to country through the years. These names are Latinizations of the names of men.

The classical names of plants sometimes commemorated kings and heroes, but more often mythological characters such as Daphne, Narcissus, Amaryllis. During the Middle Ages names were long and cumbersome, usually attempts to describe a plant in detail as, for instance, *Citrullus folio colocythoides secto, semine nigro,* for the good and simple watermelon. The study of plants was an adjunct to medicine and astrology, riddled with superstition and botanical error. During the Renaissance scholars developed a more objective outlook and with it an interest in all plants, medicinal or otherwise, accompanied by an eager search for new species, both native and foreign. The result was a flood of new plants to be named. It was during this period that the practice of giving names in honor of contemporary men began, sometimes the discoverer of the plant, but as often a distinguished botanist or patron of botany.

Plant hunting for botanical knowledge led to plant introduction for the adornment of gardens, and this steadily increased, rising to a tremendous volume in the nineteenth and early twentieth centuries. It is still in progress, though it has been curtailed by wars and the disturbed conditions of the world. First the Alps, the Caucasus, and the Levant, then Africa and the Americas, China, Japan, India, Malaya, and Thibet were ransacked, to the immeasureable enrichment of our planting resources. From China alone, "Mother of Gardens," we boast a wealth of beauties, many of which today we take for granted, just as we use their names with little thought of what they mean. We have only to look to find neatly tucked away in these Latin-sounding syllables a précis of the joyous story of gardening and of the men whose lives were devoted to the study and cultivation of plants.

Aubretia, for Claude Aubriet, French painter of flowers in the nineteenth century.

Begonia, for Michel Begon (1683-1710), French patron of botany and superintendent at Santo Domingo, whence he sent home seeds and descriptions of West Indian plants.

Bougainvillea, for Louis Antoine de Bougainville (1729-1811), French soldier, navigator, and explorer who fought with Montcalm in Canada. In 1766-69, he circumnavigated the globe and the scientific and geographical discoveries of his expedition equalled those of Cook's great voyages.

Buddleia, named by Linnaeus for Adam Buddle, English botanist.

Camellia, for George Josef Kamel or Camellius, Moravian Jesuit, missionary, and naturalist in Asia in the seventeenth century, who sent the first description of *Camellia japonica* from the Philippines.

Dahlia, for Andreas Dahl, Swedish professor of botany, pupil of Linnaeus.

Deutzia, for Johann van der Deutz (1743-1828), Sheriff of Amsterdam and patron of botany, friend of Thunberg who named the plant for him. (Thunberg himself, a pupil of Linnaeus, is remembered in *Thunbergia;* he discovered many new plants in Japan and Ceylon.)

Forsythia, for William Forsyth (1737-1804), English horticulturist, superintendent of the Royal Gardens at Kensington, who did much to establish and distribute the many new plants then being sent into the country.

Fuchsia, for Dr. Leonard Fuchs, (1501-1565), German physician and botanist whose herbal, with woodcut illustrations, describing some four hundred native German plants and a hundred foreign ones, contributed to the beginning of scientific botany.

Gloxinia, for P.B. Gloxin, botanist of Strassburg.

Gardenia, for Alexander Garden, physician of Charleston, S.C., one of the early American botanists and correspondents of Linnaeus.

Heuchera, for Johann Heinrich von Heucher (1677-1747), professor of botany at Wittenberg.

Lobelia, for Matthias de Lobel or L'Obel (1558-1616), Flemmish botanist, author, and plant collector, trained in the great Montpelier school, who moved to England and became botanist to James I.

Magnolia, for Pierre Magnol (1638-1705), Flemish botanist and professor, later director of the botanic gardens at Montpelier.

Poinsettia, for Joel R. Poinsett of South Carolina (1779-1851), American diplomat in Mexico where he discovered the plant. (Poinsettia is an horticultural name. The true scientific name is *Euphorbia pulcherrima.*)

Weigelia, for C. E. von Weigel, German naturalist.

Wisteria, for Caspar Wistar of Philadelphia (1761-1818), professor of anatomy at the University of Pennsylvania.

Zinnia, for Johann Gottfried Zinn (1727-1759), professor of medicine at Göttingen.

The practice of christening plants in honor of men has given us some of the "jawbreakers" from which most gardeners shy away in horror—*Eschscholzia, Kniphofia, Zauschneria, Strelitzia, Primula Seuptitzii,* and *Campanula Portenschlagiana.*

As in the primula and campanula above, we find men commemorated in the second or specific names of plants. Such names begin with a capital letter and end with the letters *i, ii,* or *iana,* indicating the genitive case, and they almost always refer to the discoverer of the plant. One that is frequently encountered is *Fortunei* for Robert Fortune. This enterprising character, one of the first English plant collectors in China, penetrated the forbidden interior in disguise, though he spoke little or no Chinese, and has left interesting accounts of his adventures in both China and Japan between the years 1843-61. His plant introductions include the Japanese anemone, forsythia, weigela, and kumquat. Among those which bear his name are *Rosa Fortuneana, Rhododendron Fortunei,* and *Viburnum Fortunei.*

Contemporary with Fortune was Philip von Siebold (1796-1866), a German physician and naturalist, who entered the service of the Dutch Embassy in Japan and there made a thorough study of Japanese plants recorded in his Flora Japonica. He also sent back

to Europe valuable ornamental plants, among them *Malus Sieboldii, Prunus Sieboldii,* and *Viburnum Sieboldii.*

The American, George Hall, was in Japan at the same time; and the three collectors, Fortune, Siebold, and Hall met in Yokohama. We owe many treasures to Hall, and the name *Hallii* or *Halliana* appears on many plants. The one that comes to mind at the moment is *Lonicera Hallii,* the well-known Hall's or Japanese honeysuckle.

Karl Peter Thunberg, whom we have already found represented in *Thunbergia,* appears again in *Berberis Thunbergii,* the now common Japanese barberry introduced by him some years before Fortune's travels. This period from mid-nineteenth century to its close was intensely concerned with plant exploration.

Certain names are linked with the great wealth of plants introduced from China. *Davidii* honors Pére Armand David (1826-1900), a French Catholic missionary in China and a great natural scientist, who contributed an herbarium of fifteen hundred species to the knowledge of Chinese flora. He is commemorated in the beautiful *Davidia* or dove tree, which he was the first to describe, and in *Prunus Davidii, Lilium Davidii, Astilbe Davidii, Clematis Davidii, Buddleia Davidii,* to mention only a few of his namesakes. To all of the early Catholic missionaries in Asia and elsewhere, we owe a great debt for their advancement of scientific knowledge and the enrichment of gardens.

To twentieth-century collectors in China, Englishmen (both now dead) were Augustine Henry who, from his post in the British Customs in Southwest China, botanized widely, giving the name Henryi to many finds, and Ernest H. Wilson, who collected first for the Veitch Nurseries of England and later for the Arnold Arboretum of Harvard University. Wilson probably introduced more ornamental shrubs and garden flowers to this country than any other collector; the list bearing the name *Wilsonii* is legion.

The Veitch Nurseries for years financed expeditions of collectors in all parts of the world and, more than this, saw to the propagation and distribution of the plants they sent back, an inestimable service to horticulture which is recognized in the many plants that bear the name *Veitchii.*

Among the British collectors of alpines, Reginald Farrer and Frank Kingdon Ward have left the names *Farrerii* and *Wardii* on many gems from the Himalayas. These are but a few of the outstanding men to whom we owe the great variety of plants in our gardens. Their adventures, related in their published books or journals, are as fascinating reading as any lover of gardens or of travel and exploration can find; their labors, often perilous and exhausting, are commemorated in the names of some of our loveliest flowers.

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FLORA of CUBA, Vol. III

- A Review -

By Joseph Monachino

THE WRITING OF A FLORA, always a difficult task, is usually facilitated in proportion to the number and scope of the floristic studies that have been conducted on the area. Earlier publications are very valuable aids. Many of our botanies are merely earlier ones revised and supplemented. For Cuba there was no flora of any practical account to serve as a precursor. Therefore, the high quality of *Flora de Cuba* is the more remarkable.

What did the taxonomist do previously when faced with work on Cuban plants? He found little use for Sauvalle's *Flora Cubana* of 1873. Rather, at least in New York, he had recourse to the keys and listing of species in the old typescript *Catalog of the Flora of Cuba* by Britton, Wilson, and León. Also there was, fortunately, the *Botany of Porto Rico and the Virgin Islands,* by Britton and Wilson; and most important of all, there was a rich supply of Cuban specimens in the herbarium of The New York Botanical Garden. The New York Botanical Garden herbarium has the finest West Indian material in the world, and it is here that Brother Alain has conducted his principal studies.

There is no point in elaborating on the format of *Flora de Cuba,* for it is modern in all details, and to laud the work as monumental is a redundancy. There are indented-style dichotomous keys, simple, concise, clear, workable, for all categories under the orders (the key to the orders up to the Umbellales appears in Vol. 2), and all taxa are described in model fashion.

The nomenclature, botany, and the extra-Cuban distribution range given for the species indicate that an attempt was made to utilize the latest information. For instance, *Tetralix,* originally placed in the "Bixineae" and still filed in the Flacourtiaceae in The New York Botanical Garden herbarium, is treated in the Tiliaceae, following the best disposition. *Mappia racemosa* is cited for Guatemala and Panama; and although in the original records from the areas there was some doubt as to the species, a doubt not indicated in the *Flora de Cuba,* the range shows that

(Continued on page 101)

BOOK REVIEWS

MODERN GARDENS. Peter Shepheard. 144 pages, illustrated. Frederick A. Praeger, New York. 1954. $9.50

Mr. Shepheard's volume of *Modern Gardens* is primarily for the professional landscape architect.

His introduction is certainly one of the finest explanations of the training and functions of a landscape architect, that has been done for many years.

The illustrations of both European and American work are well chosen. It is regrettable that many of the gardens were photographed too soon after the planting was done, so that the actual results of a landscape architect's conception are marred by meager planting. There is, also, perhaps a lack of the type of garden suitable to the traditional house and still following the modern conceptions of minimum upkeep and free outdoor living.

It is still, however, a brilliant and useful volume of present-day landscape architecture.

MARY DEPUTY CATTELL
Landscape Architect
New York City

WOODLAND PORTRAITS. Jeannette Klute. 50 plates in color; photographic appendix. Little, Brown & Co., Boston, Mass. 1954. $20

Among the many new texts recently published on the subject of native plants, this volume is outstanding because of its handsome plant and nature portraits. The 12½" x 17" volume with its fifty full color photograph reproductions should be of great appeal to the camera enthusiast, for its author is a skillful color technician. The subjects as portrayed are not intimate detailed studies of each subject but are personal photographic impressions by the author intended to produce appealing pictures. Each color plate quotes an appropriate few lines of verse from various sources. The Photographic Appendix recites pertinent data relative to the conditions under which each picture was taken, the camera lens and film used, and the source of the quotation.

This volume is a luxury production in the higher price brackets.

HAROLD EPSTEIN
Larchmont, N. Y.

THE HIDDEN LIFE OF FLOWERS. Translated from the French by J. M. Guilcher. 91 pages, photographs by R. H. Noailles. The Philosophical Library, New York. 1954. (Printed in Great Britain) $4.75

Here, at last, is the book so many of us have been waiting for! It tells the reader in simple language the fascinating story of sexual reproduction in flowering plants. A series of close-up enlargements shows the opening of a poppy bud, the discarding of the sepals, unfolding of the petals, maturing of the stamens and pistils, and ripening of the fruit and seeds. Other series of magnificent pictures illustrate the dioecism of the campion and the heterostyly of the primrose. The protandrous flowers of the mallow are explained understandably as being at "first male and later female." Wind and insect-pollination are contrasted and illustrated with pictures so lucid that even a child can understand them. The camera takes us into the very center of the barberry, sage, and birthwort flowers and actually shows us the wonderful mechanisms these plants have evolved for ensuring cross-fertilization by insect visitors. This is just the kind of book that those of us attempting to teach general nature study to children and young people have needed so urgently. What a pity that its exorbitant price will keep it out of the hands of so many who need it most!

There are a few imperfections which ought to be corrected in a new edition. In America most readers would not be familiar with "haricot beans" or "humblebees"—lima beans and bumblebees would be more suitable terms in an American edition. Never before have I heard the immature cones on pines referred to as "pine apples." On page 71 the chestnut is confused with the entirely unrelated horse-chestnut, while on page 79 a pedicel is referred to as a peduncle. But these are minor points. I recommend the book highly to young and old alike. Let us have more like it!

H. N. MOLDENKE, *Director*
Trailside Museum
Union County, N. J.

THE WILDERNESS WORLD OF JOHN MUIR. Edwin Way Teale. 332 pages, illustrated by Henry B. Kane; indexed. Houghton Mifflin, Boston, Mass. 1954. $4.50

In his introduction Mr. Teale says: "To understand Muir and the force that burned in him, it is necessary to realize that for him all outdoors was at once a laboratory for research and a temple of worship."

Muir's reverential respect for, and admiration of things pertaining to the natural world is well portrayed in his writings, as, "Climb the mountains and get their good tidings. Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you, and the storms their energy, while cares will drop off like autumn leaves."

John O'Mountains, as Muir was familiarly known to his friends, makes, through his lyrical writings, the majesty of mountains; the beauty of a water-falls; the peril of travel in wilderness areas; the wonder of the devotion of a dog, or the joys to be found in the solitude of great forests all very real for the reader.

Mr. Teale has with skill, and appreciation of the writings of the hardy Scotsman, brought together in this volume a most satisfying (even for Muir "fans"), selection of Muir's delightful recountings of his experiences pertaining to his travels over thousands of miles of wilderness areas in these United States, Canada and Alaska.

FARIDA A. WILEY
Dept. of Public Instruction
American Museum of Natural History

INDIAN CORN IN OLD AMERICA. Paul Weatherwax. 253 pages, illustrated, indexed. Macmillan, New York. 1954. $7.50

Perhaps the most dramatic chapter in the long story of Indian corn began in 1492, when this giant grass emerged from its dark millenia of prehistory into the light of written history. In his second general book on corn, Paul Weatherwax, professor of botany at Indiana University, focusses on this period. He reconstructs a picture of how corn was planted. harvested, stored, cooked, used in other ways, and honored in art and religious ceremonies by the American Indians at the time of the discovery. His facts come mostly from the sixteenth century writings of the soldiers, priests, and explorers who first saw the New World through European eyes. These early records are supplemented by his own wide field observations and excellent photographs of corn among surviving Indian cultures. This presentation of the alliance between corn and Indian farmers constitutes the largest and most effective portion of the book.

A smaller but still extensive section is devoted to rather involved, technical, and inconclusive arguments on the origin of the species, a problem which still stumps the experts. Some of this space might better have been devoted to considering a few of the more important and distinctive old Indian corn varieties. The book scarcely mentions their existence and completely ignores the progress which botanists and archaeologists have recently made toward untangling and separating their stories.

JONATHAN SAUER
Dept. of Botany
University of Wisconsin

THE BOTANICAL LORE OF THE CALIFORNIA INDIANS. John Bruno Romero. 82 pages, indexed. Vantage Press, New York. 1954. $2.50

The author is a Chu-Mash Indian, who grew up among members of the Cahuilla tribe in southern California. In this little volume he shares with the reader much tribal knowledge about plants of the Pacific Southwest that are used medicinally by the Indians. He gained his knowledge first hand from the medicine men of his people, a principal one of whom was his uncle, Chief William Pablo, to whom the book is dedicated and who provides a most interesting chapter. In it Chief Pablo relates how epidemics of measles, smallpox, and Spanish influenza were successfully combatted by treating patients with an herb steambath compounded from *Artemisia tridentata, Larrea mexicana, Piperacea, Eriodictyon glutinosum californicum* and *Adiantum capillus-Veneris,* plus the administration of an herb tea made from *Ephedra* and *Sambucus pubens.*

The great bulk of the book is taken up with an enumeration of one hundred and twenty medicinal herbs and an account of their uses, distribution, and recipes for their preparation. Very few are known to modern medical science. Their scientific names are for the most part accurate, but some plants can be referred only questionably to recognized species.

D. D. KECK

YOUR FLORIDA GARDEN. John V. Watkins and Herbert S. Wolfe. 319 pages, illustrations, index. University of Florida Press, Gainesville. 1954. $5

This book by two well-known and highly regarded Florida University horticulturists strikes this reviewer as the best work on gardening that he has ever read.

Everything is here that the gardener needs to know. It is comprehensive yet not prolix, accurate, lucid, and readable.

Many of the chapters are of equal value to gardeners everywhere. The chapter on garden planning for clarity and common sense is better than most works on the subject.

EVANS D. RUSSELL
Sebring, Fla.

SOIL. G. V. Jacks. 221 pages, illustrated, indexed. Philosophical Library, New York. 1954. (Printed in Great Britain) $5

This late publication really deserves a higher sounding title than the author G. V. Jacks has chosen, but all through the volume there is no doubt the word soil is at the back of all his thoughts, no matter what the subject matter may be.

The first paragraph of the Preface aptly describes the substance of its contents: viz, "The purpose of this book is to give the farmer, the student of agriculture and all who realize the importance of the cultivation of the land an insight into the new science of soil management."

The twelve chapters that make up the more than two hundred page treatise are written in a not too technical manner, and the author has made the text so clear and entertaining that all who read will be well repaid. Soil is a subject that has been pondered ever since the beginning of time; yet today it is still a subject of study throughout the world by experts in their particular fields of agricultural science.

The plain explanations of some of the chapters, such as "The Architecture of Soil," "The Chemistry of Soil," "Soil Water," and "Humus," make this book instructive reading for the keen amateur gardener, and help to show just what must happen to make our garden "tick" in a manner to give satisfaction from our efforts.

ARTHUR W. KING
Huntington, N. Y.

MY LIFE WITH THE MICROBES. Selman A. Waksman. 364 pages. Simon & Schuster, New York. 1954. $5

If there had been no author's name on this book, I would have read only a few pages before saying, "This is Dr. Waksman talking." In every line his candid and truthful attitude and pertinent reasoning are evident.

An informative and interesting picture of life in Novaia-Priluka, his birthplace, in the late eighteen hundreds is given when Dr. Waksman describes his boyhood. His schooling experiences in Priluka, Vinnitsa, and Odessa explain the educational system, and comments on the political, economic, and social conditions help to explain why he came to America.

The chronology of his and his family's life in the United States covers his teaching and microbiological research at Rutgers University as well as his advisory work with several companies. Interspersed are his chapters on the two World Wars and his scientific activities at the time. He also gives an evaluation of the personalities and scientific achievements of Chodat, Willstätter, Warburg, Beijerinck, and many others whom he visited in 1924.

In a final portion of the book, Dr. Waksman describes his discovery of various antibiotics, the problems met and solved and the honors, such as the Nobel Prize, that he received. He concludes with a discussion of some practical aspects of scientific labor.

When you have finished this book, you will carry away the feeling that Dr. Waksman's attitude toward life is one of hope and optimism bolstered by performance of responsibilities according to one's best abilities and efforts.

JOHN B. ROUTIEN
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CLIMATIC ATLAS OF THE UNITED STATES. Stephen S. Visher. 403 pages, illustrated with maps and diagrams; indexed. Harvard University Press, Cambridge 38, Mass. 1954. $9

Horticultural progress in the United States focuses increasing attention upon the need for information concerning the diverse climates of our country and for an understanding of the ways in which plant growth and adaptability are climatically regulated. The gardener becomes more and more concerned with plant hardiness, with frost-free seeding dates, and with rainfall and temperature cycles, while the mail-order nurseryman is no less vitally interested in knowing, geographically, where his listings are likely to succeed—and why.

It is for these reasons that horticulturists will join discriminating farmers, conversationalists, the vendors of numerous items from heating units to anti-freeze, and climatologists themselves in welcoming this new climatic atlas by Dr. Visher, professor of geography at Indiana University. This is the first comprehensive treatment of the climates of the United States (Canada excluded) since the Yearbook of Agriculture, *Climate and Man,* 1941, and the *Atlas of American Agriculture,* 1936, both published by the U. S. Department of Agriculture. Many maps from these and other sources have been reutilized by Dr. Visher, to which are added some four hundred prepared by himself.

The text is brief. It is confined largely to a twenty-two page introductory discussion of major climatic influences. The "meat" consists of one thousand-odd maps of temperatures, dates, precipitations, etc., grouped into thirty-four chapters and seven parts, parts 1-5 dealing with temperature, winds, sunshine, humidity, and precipitation, part 6 with some effects of climate upon agriculture and topography, with part 7 devoted to climatic regions and changes.

With few exceptions, each map is of the entire United States reduced to an area of three by five inches—from which it is evident that emphasis is upon country-wide rather than local climatic conditions. From the nature of presently available data, it is also inevitable that many maps are based upon the records of only the six hundred-odd first order weather stations, which are usually located in urban centers and may often not be representative of rural or even suburban conditions. If the horticulturist with essentially local interests may be disappointed by these limitations, he will find partial compensation in the excellent bibliography of source material upon which each chapter is based and from which more detailed information could often be obtained. For the classroom student or for anyone with a serious interest in broad aspects of the relation of climate to plants and to everyday living, the value of this new climatic atlas is unquestioned.

HENRY T. SKINNER, *Director*
U. S. National Arboretum
Washington, D.C.

FLORA OF CUBA **(from page 99)**

reference was made to comparatively recent data.

The two hundred and two figures are, with few exceptions, photographs. For taxonomic purposes, line drawings of diagnostic features are superior to photographs—but one must consider expenses.

The synonomy presented is adequate. Of course, additions and changes will be made after revisions. *Leretia racemosa* could have been easily ascertained in literature to be a synonym of *Mappia racemosa.* Some names must await study by monographers for their proper disposition. There are cases that may remain hidden for a long time. The identity of *Sida longistipula* Merrill with *Sida ciliaris* Linnaeus might have been such a case. The former was described from the Philippines in 1918, and its synonomy with the American *S. ciliaris* is for the first time declared in the present review. On p. 367 *Cactus parasiticus* Linnaeus is placed in the synonomy of *Rhipsalis Cassutha* Gaertn. Since Linnaeus' specific epithet is the older, it appears offhand that there is an error or something needing explanation. On looking further into the matter, one learns that Britton in "Torreya" for 1909 suggested that the Linnean name was not for the species; otherwise the proper name would be *Rhipsalis parasiticus,* as published by Haworth. Britton stated that the type of *Cactus parasiticus* is a *Vanilla.*

Several other points that might be considered errors or questionable will be mentioned. On p. 183 Icacinaceae is stated to comprise fifteen genera and "más de 10 esp." It would be strange indeed if there were less species than genera in the family! But this is obviously a typographical error, of which there are remarkably few in the work. In the key to the families under the order Sapindales (p. 140), opposite leaves lead to Staphyleaceae, but *Huertea* (p. 182) is correctly described with alternate leaves. In the same order, the key to Celastraceae (p. 140) has the jarring combination of characters "semillas

(Continued on inside back cover)

NEWS, NOTES and COMMENTS

Spring Garden Tour. On the very day on which members of The New York Botanical Garden and their friends are enjoying the annual Spring Garden Tour—this time to Greenwich, Conn., the May-June issue of THE GARDEN JOURNAL is leaving the printer's. Therefore, it has been impossible for us to include a story of the tour in this issue. Our readers will find an illustrated story in the July-August issue.

The Spring Garden Tour is sponsored by the Volunteer Associates of The New York Botanical Garden, of which Mrs. James Cox Brady and Mrs. John G. Winchester are co-chairmen. Co-chairmen of the Spring Garden Tour Committee are Mrs. John L. Senior and Mrs. Clarence Stanley.

Pruning Exhibit. This exhibit, in the Museum and Administration Building of The New York Botanical Garden, opened April 1 and will continue throughout the summer. The correct way to prune roses; such shrubs as forsythia, spiraea, buddleia, hydrangea, deutzias; small fruits as blueberries, currants, gooseberries, grapes; espaliered fruit trees and mature apple tree, are demonstrated.

The Special Display Committee, of which Mrs. Charles Burlingham is Chairman, was assisted in setting up the exhibit by T. H. Everett, Horticulturist and Curator of Education, Louis Politi, Head Gardener, and Vincent Rampino, Acting Superintendent of Building and Grounds.

At Devon House. The enclosed cutting showing leaf, flower, and seed, has been taken from a small tree—about six feet—growing in the gardens. The seeds which grow easily — as do cuttings also — were brought from Costa Rica about five years ago. The little tree has been a very lovely white umbrella for the past six weeks, being entirely covered with its fragile blooms. I planted many seeds from this little tree about a year ago, and have sent out dozens of potted plants as Christmas greetings to flower-loving friends here. Even the tiny trees—from twelve to fourteen inches tall—were blooming freely.

I have not been able to find out the proper botanical name for this tree. It is not indigenous to Costa Rica, I believe, but was brought in several years ago. However, nobody seems to know the origin. It is called "Pasquita" locally (in Costa Rica)—no doubt because it blooms, like the poinsettia at Christmas time. It is undoubtedly one of the many euphorbiaceae and such a lovely thing must surely be known elsewhere, if not in Puerto Rico or Jamaica. I shall be most grateful if you can help me to identify this plant.

Speaking of poinsettias—there are great hedges, over ten feet high, surrounding Devon House. Everywhere this year poinsettias are particularly lovely because of the wettest of summers which gave all shrubs and trees an excellent lease on life. So often the summers here are so arid and windy that there seems to be little growth from year to year.

I have a brasso-cattleya, 'Venus,' in bloom this morning (Jan. 4, 1955), three giants on a very long stem, and brasso-cattleya 'Mrs. Leeman' also has three perfect blooms. When the sheaths start to break, I place the plants in a small cheesecloth-covered house as protection against bees, beetles, and even the hummingbirds. As a result, the blooms are usually perfect.

I had a very large collection of orchids in Costa Rica, begun some thirty years ago; but the importation of plants is very restricted here and the fumigation usually plays havoc with the more delicate ones. It is a great pleasure to have a few blooms for one's friends, every week—that is the joy I get in having orchids as a hobby. We have a very active orchid society, affiliated with the American Orchid Society, of which I am a member too. Our display tables at the monthly meetings are remarkable for the variety and condition of the plants. We were given second prize in two successive years at the big show in Washington, D.C., and we hope to reach the top some day.

Jamaica is such a glorious island at this particular time of year—and through February. At Devon House, one of the old "great houses" as they are called—and very few of them remain—we have more than twelve acres where, over the years, I have planted every sort of tree and shrub that I can find. The flowering trees are very beautiful, a few in bloom throughout the year—the poinciana, spathodea, teak, with large feathery cones, like horse-chestnut blooms; the legnum-vitae with tiny evergreen waxen leaves interspersed with clusters of "violets" and followed by orange acorn-like seeds. The last is one of the loveliest and finest trees on the Island, and the wood is as hard as iron.

The akee, which has fine waxy leaves, is a delight to behold when its red fruits appear. The giant mahogany just outside my study window on the second floor has about a dozen little "Greek-vaselike" seed pods. These will soon burst their hard shell and the winged seeds will be scattered around the courtyard. This tree is "grannie" to many younger trees which I have planted—breadfruit, cashew, yoke. A giant cotton tree, that has huge branching arms which reach out in umbrella-like formation on all sides, is some eleven feet in diameter. Its great elephant-trunk roots spread for seemingly hundreds of feet through the grounds. Jackaranda, palms in many varieties, and the lesser fruit trees are about us, too.

IRENE LINDO
Devon House
Halfway Tree
Jamaica, B.W.I.

The plant is, we believe, *Euphorbia lencocephala* Lotsy, native to Guatemala, Honduras, El Salvador, and Mexico. It is called "Flor de Pascua," "Pascuita," "Flor de Nino," etc. In Guatemala bunches of flowering branches of this euphorbia are used as decorations in houses and churches and, we believe, the shrub is cultivated in Central America. We do not have it in the Conservatory of The New York Botanical Garden, and there is no reference to it in Bailey's *Cyclopedia* nor in *Hortus*.

WILLIAM J. ROBBINS

Garden Design Discussed at Williamsburg Symposium. Future gardens will be smaller, simpler, and designed with a freer hand, following the same trend as architecture, Hubert B. Owens, head of the landscape department of the University of Georgia, told the Ninth Annual Garden Symposium at Williamsburg. Ever-increasing costs point the way toward smaller, more compact lots with simplified, easy-to-maintain plantings. Grass will be used as "scatter rugs" in the garden with more paved paths and permanently built-in garden furniture. The West Coast has done more than any other regional section to integrate the specific needs of the family with its outdoor environment, according to Dr. Owens.

Garrett Eckbo, landscape architect and planning consultant of Los Angeles and San Francisco, who gave the John Clayton lecture at the Symposium, said the modern

Luncheon in honor of Baron de Vos van Steenwyck, Consul General of The Netherlands, prior to preview of Early Bulb Show in the Conservatory of The New York Botanical Garden on February 25, 1955. Seated at the head table (left to right), Dr. Harold O. Voorhis, President of The Netherlands-American Foundation, Mrs. Robert Moses, wife of the Park Commissioner of the City of New York, Mrs. Robert F. Wagner, wife of the Mayor of the City of New York, Dr. William J. Robbins, Director of The New York Botanical Garden, and Norman Frylink, bulb grower of Sassenheim, Holland.

approach to living with gardens came as a revolt against the traditional garden designs passed down to us from other cultures and countries. "Americans are now finding the courage to establish their own form of design to fit their needs and period."

"Modern garden design means more than throwing away the iron deer and tearing down the summer house," Ralph H. Bailey, Garden Editor of "House & Garden," told the Symposium. "It creates a new kind of living space, extending our homes to the outdoors; gardens may be restful, dramatic, or convenient according to the needs of the family. Too often the modern garden is an outdoor rumpus room scented by the odor of hamburger. It should be planned as the rest of the home is planned."

T. H. Everett, Horticulturist of The New York Botanical Garden, said Americans should develop more patience as gardeners; they strive for an immediate effect, while good gardens take from five to ten years to develop. The amateur gardeners hold the key to the gardens of the future, and they should do more experimenting with plant materials and develop better plants. Mr. Everett said, "No country in the world has the capability of growing the great variety of plants available today, and no country has the enthusiasm of our amateur gardeners."

Specific advice on soils, fertilizers, hybridization, and plant materials was given home gardeners attending the Symposium. Fred F. Rockwell, Senior Editor of "Flower Grower" Magazine, discussed the year-round use of bulbs; George H. Pring, Superintendent of the Missouri Botanical Garden, showed the wide variety of waterlilies, including tiny blooms an inch in diameter suitable for home use; and Richard D. Thomson, rosarian, showed the many roses which can be used as borders, bedding plants, shrubs, and six-foot high backgrounds.

The Symposium, sponsored by "Flower Grower" Magazine and Colonial Williamsburg, was attended by over five hundred home gardeners.

Papers at Midwestern Shade Tree Conference of Interest to Arborists and Home Owners Anywhere in the United States. The tenth annual meeting of the Midwestern Chapter of the National Shade Tree Conference was held February 23-25, 1955, in St. Louis, Missouri. The three-day meeting, devoted to a discussion of insects, diseases, and other tree ailments, was attended by nearly three hundred representatives of tree service companies, city forestry departments, park districts, nurseries, educational institutions, garden clubs, and other groups interested in trees and shrubs.

Although the educational program was directed primarily towards consideration of problems of concern to those engaged in arboriculture in the Midwest, several of the papers were broad enough in scope to be of interest to arborists and home owners in any section of the country. In his discussion of "Damage to Shade Trees from Construction Operations," Gerrit A. Visser of the Shield Shade Tree Specialists, Clayton, Missouri, outlined the procedure his organization has used successfully in protecting trees around which changes of grade were planned. Where deep fills are scheduled, treatment was suggested as follows: (1) Remove all sod, leaves, and other organic matter from the area over which the fill is to be placed. (2) Spread washed gravel of two-inch size over the original ground surface. At the tree trunk it should be brought to the height of the proposed fill, tapering to a depth of twelve to eighteen inches slightly beyond the branch spread. (3) Place upright tiles extending from the top of the proposed fill to the original ground surface, and closely enough together so there is one tile for each fifty square feet of surface. (4) Place an outlet drain tile extending from the fill area to carry away surplus water. Such treatment, Mr. Visser explained, provides for circulation of air and water necessary for the tree's survival.

When grades are lowered and roots cut, Mr. Visser suggested that porous topsoil be placed over the root-spread area and this followed by a careful program of watering, feeding, and pruning to re-establish the normal balance between roots and crown. In some cases, he said, a retaining wall might be built to protect the cut ends of the roots against drying out, and backfilling between the wall and the ends of the roots with a mixture of topsoil, leafmold, peat moss, or similar material to promote new root growth.

An excellent movie film in color and sound, "The Fight to Control Dutch Elm Disease," was presented by E. F. Herrbach, Horticulturist of Standard Oil Company, Chicago, Illinois. This 16 mm. film, made during 1954 under the sponsorship of the Standard Oil Company and illustrating the symptoms, diagnosis, and treatment of the disease in scenes located in the Midwest, is available to public groups through Standard's sales division managers.

E. R. Spencer, consulting botanist and plant pathologist of Lebanon, Illinois, discussed "Trace Elements and Plant Health." Pointing out that it is becoming increasingly evident that many of the trace elements are essential to good health of plants, Dr. Spencer suggested fly ash as a possible source of these materials for those who wish to improve depleted soils. This material, he explained, is the residue that remains when coal is burned in a blast furnace, and is available at many large industrial factories and plants. It is rich in trace elements, he asserted, containing copper, cobalt, manganese, boron, molybdenum, aluminum, sodium, sulfur, fluorine, zinc and others. In pot cultures in which fly ash was used, Dr. Spencer has achieved good growth results with several species of plants.

One of the papers that attracted general interest was presented by Robert N. Goodman, professor of horticulture at the University of Missouri, Columbia, on "Concentration and Timing of Antibiotic Sprays for Control of Fire Blight." He described the work that has been done at the University over the past four years and stated that investigations to date indicate antibiotic materials act both as systemic chemotherapeutants and protectants; that they have been found active primarily against plant bacterial pathogens.

Fire blight, Dr. Goodman explained, is a bacterial disease that attacks apples, pears, hawthorn, pyracantha, cotoneaster, flowering quince, and related plants. It is of importance to the arborist and home owner since many of the ornamentals such as flowering crab, mountain ash, and others are susceptible. Because of the high value of such plants, even costly treatments, if effective, often are justified.

In early work performed in the laboratory and greenhouse, Dr. Goodman said the antibiotics streptomycin, terramycin, and thiolutin were used, principally on Jonathan apple trees infected with fire blight. In 1953, further experiments were conducted in apple orchards under conditions of natural fire blight infection, and it was found that combinations of streptomycin and terramycin or streptomycin alone gave control of the disease. "Complete control was obtained," he said, "where seven and six antibiotic sprays were applied at four-day intervals beginning at either full pink or thirty to fifty per cent of full bloom." Because it was realized that such a spray program was too costly for commercial orchard use, experiments were continued in 1954 in an attempt to achieve control of the disease with a reduced number of spray applications and at the lowest possible concentration of the materials.

In the 1954 tests, agrimycin, a commercially produced combination of streptomycin and terramycin, was used. In all spray schedules the first spray was applied when the trees were in the stage of twenty to fifty per cent of full bloom; successive sprays were applied at four to five-day intervals, with concentrations ranging from 25 to 100 ppm. It was found, Dr. Goodman said, that either a 4- or 3-spray schedule at concentrations of 50 and 100 ppm provided effective control of the disease; a 4-spray schedule at concentrations of 35 ppm also gave protection to the trees. The 25 ppm concentration caused no apparent injury to the trees, but slight marginal burning of foliage occurred occasionally when concentrations of 50 and 100 ppm were used, he stated. Fruit set, development and appearance were not impaired, even in 6-spray schedules at concentrations of 100 ppm. Further studies are to be made this year.

Officers elected for 1955 are: President, Frank Hanbury, arborist, Peoria, Illinois; Vice-President, Charles W. Warren, city forester, Omaha, Nebraska; Secretary-Treasurer, Noel B. Wysong, forester, Cook County Forest Preserve District, River Forest, Illinois. Elected to the Board of Governors of both the Chapter and the National Shade Tree Conference for a two-year term were John W. Swingle, arborist, Denver, Colorado; J. C. Carter, head of the section of applied botany and plant pathology, Illinois Natural History Survey, Urbana, Illinois; Richard C. Sherman, of the Caterpillar Tractor Company, Peoria, Illinois; and C. L. Wachtel, arborist, Wauwatosa, Wisconsin.

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Honors to Dr. Henry A. Gleason. The Swedish Phytogeographical Society has elected as Honorary Member Henry Allan Gleason, a distinguished man and deserving of the best for his investigation of nature. Uppsala, November 1954. This is the translation from the Swedish on the accompanying illustration. Dr. Gleason is Curator Emeritus of The New York Botanical Garden.

Dr. Ralph C. Benedict, Emeritus Professor of Brooklyn College, who began his fern research at The New York Botanical Garden in 1908, is engaged in making a study of the fern literature of the past fifty years. Dr. Benedict is President of the American Fern Society, of which he has been a member fifty years, and has been identified with the Society's Journal for the past forty-five years.

"First All-State Flower Show." The theme, "First All-State Flower Show," is appropriate as this is the first time all the member clubs of the Federated Garden Clubs of New York State have joined in a show. For many years this has been a dream and its realization marks a significant milestone in the organization's history. The show will be held at the County Center, White Plains, N. Y., June 16-19, 1955. Mrs. Charles Hoffman, of Scarsdale, is the general chairman.

The entire Center will be given over to exhibits, with amateur, professional, and commercial exhibitors participating. Gardens and flower arrangements will be featured on the first floor. The small gardens of approximately ten by ten feet, featuring plant combinations will be done by the participating garden clubs.

Special exhibits include one by The New York Botanical Garden on Conservation.

Committees are preparing schedules for horticulture, flower arrangements, and Junior Club classes. Because June is the month of roses, the horticultural section will feature forty or more classes for roses but other garden flowers will be included as well as shrubs and house plants.

The Arrangement Classes have as their theme, "Interpreting Beauty through the five Senses"—Seeing through Color, Hearing through Music, Smelling through Fragrance, Touch through Texture, Taste in Table Settings. This is imaginative enough to stimulate outstanding compositions. The Guest Arrangement Class will interpret the sixth sense, Intuition.

The Junior Section, always a popular feature of any show, will be under the direction of the State Chairman of Juniors, Mrs. Arthur Kemble. Ample space is allotted with some twenty-eight tables provided for exhibits including horticulture, arrangements and allied work.

Tickets will be available to clubs in advance of the opening at the reduced price of 75c each in lots of ten. Tickets will be $1.00 at the gate. Children under twelve, 25c each. Patrons ($5.00) will be listed in the Souvenir Book.

October Events at the Garden. Children's Flower Arrangement Competition, sponsored by Volunteer Associates of The New York Botanical Garden in cooperation with the School Garden Department of the Board of Education of the City of New York—October 22, 1955.

Eleventh Annual Chrysanthemum Show —October 21, 22, 23, 1955.

LET THERE BE HERBS

"Lettuce, Cresses, Radishes etc. must be exquisitely picked, cleans'd, wash'd, and put into the Strainer; swing'd and shaken gently, and, if you please, separately or all together". . . *Acetaria, A Discourse of Sallets* 1699.

People who have grown and eaten tender young peas and thinnings of carrots and lettuce will ask in all seriousness, "When do you begin to dry herbs to use them." They are thinking, of course, of sage, rosemary, and thyme which are usually bought in powdered form in the grocery. Such plants have a strong concentration of flavor-bearing oils in their leaves, which remains even after dehydration. However, even these seasonings are more delectable when used green, fresh from the garden.

Dill, chervil, and fennel are ready for picking soon after their first true leaves develop. The thinnings from the row can be chopped and added to green salad. Basil, marjoram, parsley, and savory can be cut repeatedly during the growing season. Perennials like chives, lovage, and tarragon are most succulent and tasty before the plants begin to send up flowering stalks. Chives and tarragon should be cut right back to the root once in the season. If you must enjoy the pretty purple pompoms of chive blossoms, then hold off cutting back the plants until after blooming. Tarragon becomes woody if not cut to within a few inches of the ground before the Fourth of July. A second crop of tender shoots may be harvested, if the plants are sidedressed with potato fertilizer after the first cutting.

In order not to waste the bounty of savory greens, several methods of storing can be adopted. Tarragon is traditionally put into vinegar, preferably a white wine type, to yield its essence to future salads. Like chives, it is difficult to dry without losing its verdure unless artificial heat is used. Freezing small bouquets of such herbs is a quick and most satisfactory way of preserving them. Tie a string around the base of the sprigs of herbs and dip them into boiling water for one minute. Whisk them into a chilling bath of ice water at once. Then drain and place in a small cellophane bag. Delicate chervil freezes without blanching and keeps its bright color. Basil must be completely immersed in the blanching water in an instant; otherwise the rising steam will blacken the leaves. Woodier plants such as thyme, winter savory, and rosemary respond to drying so well that freezing is not necessary.

When taken out of the freezer, the herbs must be chopped fine before using. If several varieties are combined in a package, the ingredients for fines herbes will all be at hand. The usual rule for selection is to include one member of the parsley family such as chervil or parsley, one of the onion family such as chives or shallot tops, one or more of the mint family such as basil, marjoram, or savory. The amount of fresh herb substituted in a recipe which calls for dried seasonings is four times that of the powdered herbs. It is best to add less and taste the dish before adding more. A dark green taste of herbs should never predominate.

In this age of prepared foods, the day may come when you can buy frozen chicken breasts adorned with fresh frozen tarragon sprays. Until then you can add a few sprigs of summer savory to each package of beans frozen and make up separate packets of selected herbs for such dishes as this chicken salad Boulestin.

Chicken Salad Boulestin

Season plain boiled rice which has been well drained, while still hot with salt, pepper, oil, vinegar and let cool. Cut up cold roast chicken and spread over the rice which has been placed in a large bowl with slices of hard-boiled egg around it. Put a little mayonnaise (with a touch of mustard in it) all over, together with chopped parsley, tarragon, and chervil. Stir only at the last minute, after the dish is on the table. There should be plenty of dressing in the rice and not too much mayonnaise.

GERTRUDE B. FOSTER

SPRING (from page 84)

Since we at The New York Botanical Garden are at present trying to interest new small-home owners in the many advantages of our membership opportunities, I was especially interested in the exhibit featuring what was a compact six or seven-room suburban or development home, with the usual limited front and back footage. Upon seeing what had been done with this limited ground space — and inexpensively too, I am told — I could readily visualize a pressed-for-time commuter and his wife with growing family affording both the money and the time for care required for such grounds.

Another idea that we have been discussing is a garden program for children at The New York Botanical Garden. Three exhibits at the show proved to me that such a program would be welcome by New York City school children. The series of model gardens staged by the Junior Gardeners of the Massachusetts Garden Federation, the outdoor living room planned and designed by the Jamaica Plain High School, and the attractive planting of the Norfolk County High School were beautifully done. It was difficult to believe that children had designed and staged these exhibits from start to finish. Officials of the Society told me that a similar plan is now under way for groups of children in the sub-teen age. To all of us who have felt delight in our heart at the sight of a small child holding a flower in his cupped hands enjoying the wonder of it, or has watched a child's amazement when his bulb explodes to life on the window-sill, comes the realization that we must do something now for these children. For not only are busy and interested children happy and not apt to get into serious trouble, but more important, we should provide them with opportunities if they show a real desire or leaning to the study of nature.

A two-hour tour of a show that size was not long enough. I saw so much that I cannot remember. I do remember the greenhouse filled with Mrs. Edna Roberts' African violets; the collection of house plants; the mushroom display; and the Roadside Rest Area (without the leftover picnic papers). I was fascinated by the size and color of the miniature flowering bulbs; and Mrs. Edwin S. Webster's orchid display, for which she won the American Orchid Society Silver Medal, was superb.

Sixteen garden clubs collaborated with the Women's Exhibition Committee of the Society, to show home owners how to achieve the most effective results with flowers in full sun, in filtered sunlight, and in shade. Interesting features of this exhibit were two sun porches in which unusual plant material was displayed.

I thoroughly enjoyed every minute of the tour through the seven acres of color and beauty, and having been born and brought up not far from Boston, wound up the day in typical New England fashion. In all of the sections of this country in which I have traveled, a "chowder" may mean different things. So the very last thing I did on this memorable afternoon, was visit the "Chowder Bar," on the lower floor, for a bowl of what I *know* is the *real chowder.*

Much of what I saw was "forced" spring, but by the time this report reaches you, the earth will have fully stirred, nature will have been at work with a will, and... *Spring is here!*

BOOK REVIEWS (from page 101)

2 ó más en cada cavidad del fruto" and "óvulos 1-2 en cada cavidad." The first lead is incorrect. The fruit of *Rhacoma Crossopetalum* is by arbortion usually 1-celled and 1-seeded. In the key to the species of *Ginoria* (p. 392), *G. Koehneana* and *G. arborea* are placed under flowers 5-6-merous, but it is stated lower down in the key that the sepals are 4. Four sepals indicates four petals and, in a sense, this means a 4-merous flower. The key to the species of *Eugenia* (p. 444) has *E. monticola* under pedicels puberulous, but in the text (p. 456) the inflorescence is described as "lampiñas." If this means that the pedicels are puberulous but the axis of the inflorescence is glabrous, it is not so. Most of the material of *E. monticola* has the inflorescence and also the young vegatative parts of the plant puberulous.

The species in a systematic work are best arranged in a position to indicate botanical affinity. *Colubrina reclinata* and *C. ferruginosa* (p. 218-219), which are so close that they might be regarded as varietal, are placed in opposite ends of the treatment. They are separated by such different species as *C. asiatica* and *C. cubensis.*

"*Sida ciliaris* L. var. *involucrata* (A. Rich.) I. D. Clement, stat. nov." appears on p. 271. The basonym is given, but not the place and date of its publication. Therefore, the new combination is not valid according to Article 42 of the Code. It is assumed that Clement did not validly publish the new combination elsewhere; a reasonable assumption, as Clement is not mentioned in the "Bibliografia."

The sterile specimens León 10900 and 10901 and Roig & Bucher 6666 & 6904 are cited by Alain (p. 385) as probably belonging to an undescribed species of *Lagetta.* The specimens are undoubtedly of the same species as Ekman 15649, which has flower buds. The axillary short-pedicelled 4-merous flowers are hairy outside. Three buds were examined and all were found to be pistillate, which indicates that the plant is dioecious. The reviewer suggests the genus *Daphnopsis;* if new, it is a species related to *D. cuneata,* differing principally in its much larger leaves.

How will the taxonomy in *Flora de Cuba* stand in the future, after repeated study? Let us select an example. The Euphorbiaceae is the largest family in volume three, and *Phyllanthus* (65 spp. recognized by Alain) is the largest genus in the family. Also, it is a difficult genus. The New York Botanical Garden material has now been annotated by Grady L. Webster, University of Michigan. About twenty of the species received names other than those in the Flora, three in different genera; four species relegated to synonomy by Alain are reinstated; at least two new species are proposed. It should be borne in mind that not all changes proposed by a monographer are always for the better, but this example might in a way indicate what to expect in the more difficult groups. It reflects high credit on *Flora de Cuba.*

FLORA DE CUBA. Vol. III. Dicotiledones: Malpighiaceae a Myrtaceae. Hermano Alain (E. E. Liogier). 502 pages, illustrated. Del Museo de Historia Natural del "Colegio de la Salle," Vedado, La Habana, Cuba. 1953 $6.50.

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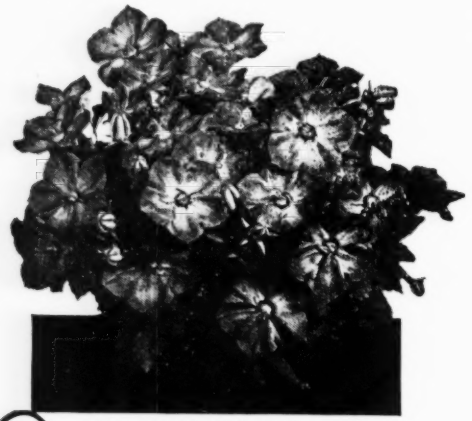

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Charlie McCarthy. Rare new Polyantha rose. Irresistible as its spritely namesake. Sturdy, rounded, 18" high bushes produce unending profusion of dainty 1" pure white flowers. Resembles a glistening snowbank.

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Campanula, *Wedgewood.* Finest dwarf to date. A "gem of a plant" that is destined to be tremendously popular. Dozens of brilliant, violet-blue flowers on rigid stems look skyward from a cushion of deep green foliage.

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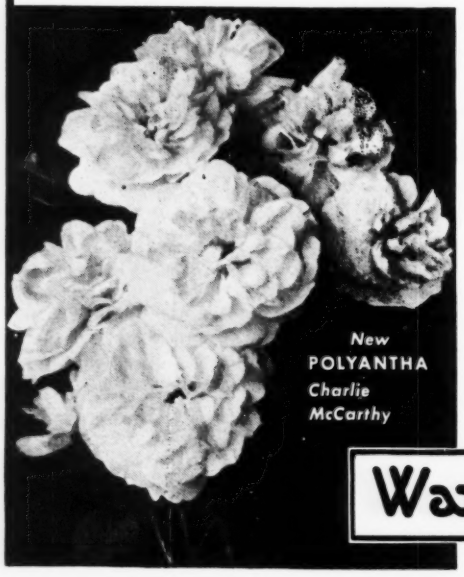
Shasta Daisy, *Cobham Gold.* First break from white. Lovely flowers, fully 4" across, have high crested centers of fine, pale yellow enhanced by double row of creamy-white guard petals. Blooms freely until frost.

Veronicas, *Baccarole* (deep rose-pink), ***Minuet*** (dusty-pink), ***Pavane*** (clear pink). Three graceful, new, English varieties of exceptional beauty. Completely hardy. Ideal for borders. Bloom lavishly during July and August.



New POLYANTHA Charlie McCarthy

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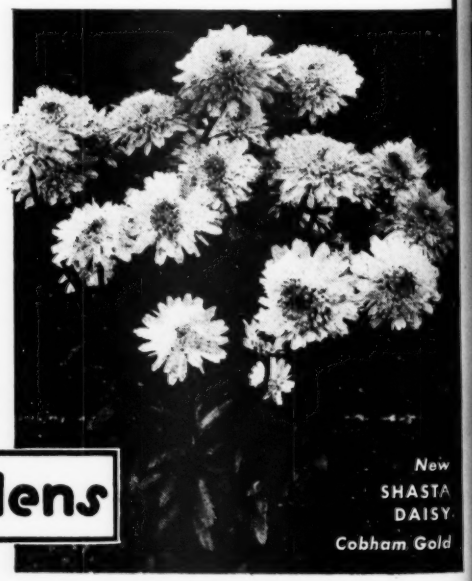

New SHASTA DAISY Cobham Gold

Wayside Gardens